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ABSTRACT

Thirty-five papers on the measurement of outcomes of nursing practice, education, and administration are presented from the 1981 research conference of the Southern Council on Collegiate Education for Nursing. Papers and authors include the following: "Why Nursing Research?" (Hildegard E. Peplau); "Job Satisfaction in Nurse Faculty: Test of a Revised Theory of Work Motivation" (Shirley J. Carey); "Level of Nursing Education and Perceptions of Nursing Performance" (Kathryn Suggs Chance); "Predictors of Success in Nursing School and on State Board Examinations in a Predominantly Black Baccalaureate Nursing Program" (Mary Swope Dell, Gerald Halpin); "Automation and Social Alignment in Hospital Nursing Units" (Beverly Henry); "Coping Strategies of Neonatal Intensive Care Unit Nurses" (Sharol F. Jacobson); "Staff Nurse Attitudes Toward Chronic Pain Patients" (Paula Myers Jamison); "A Comparison of Role Conceptions Among Nursing Students and Faculty from Associate Degree, Baccalaureate Degree, and Diploma Nursing Programs and Head Nurses" (Barbara A. Peita); "The Faculty Work Plan and Appraisal: Its Potential for Faculty Role Development" (Luz S. Porter); and "Screening for Abuse and Neglect in a Neighborhood Health Clinic" (Sharon Separs, Aileen Edgington). (SW)

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MEASURING OUTCOMES OF NURSING PRACTICE, EDUCATION, AND ADMINISTRATION

Proceedings of the First Annual SCCEN Research Conference

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December 4-5, 1981
Austin, Texas

Edited by William E. Field, Jr.

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FOREWORD

The first annual research conference of the Southern Council on Collegiate Education for Nursing marks a turning point in regional activities to strengthen nursing research in the South.

Since the early Fifties, when the Southern Regional Education Board (SREB) and nurse leaders in the South identified nursing research as a regional need, the focus has been on stimulating research by bringing together potential researchers, assisting them in identifying common research interests, and providing consultation in conducting studies. Two regional projects focused on collaborative research. The first was administered for the region at the University of North Carolina at Chapel Hill in 1974-77. In it, 55 nurses representing most of the Southern states cooperated in conducting 44 clinical studies. In the second project, administered at SREB in 1977-80, 78 nurses formed 19 research groups and conducted collaborative studies.

In the new phase, the focus will be on annual research conferences, co-hosted by the Council and interested institutions, to help in the dissemination of research findings, to provide a forum for identifying the region's needs and resources for research, and to assist nurse researchers in identifying others with similar research interests. At the request of the Council's Executive Committee, representatives of four doctoral programs serve as a committee to plan the conferences. The committee members are: William E. Field, Jr., The University of Texas at Austin; Nita W. Davidson, succeeded by Mary Colette Smith, the University of Alabama in Birmingham; Anne Myers Gudmundsen, Texas Woman's College; and Ora L. Strickland, University of Maryland.

The University of Texas at Austin served as the Council's co-sponsor for the first annual conference, held in Austin, December 4-5, 1982, and Dr. Field served as editor for this publication of papers presented at the conference.

Audrey F. Spector
Executive Director
Southern Council on Collegiate
Education for Nursing

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WHY NURSING RESEARCH?

Hildegard E. Peplau, R.N., Ed.D., F.A.A.N.
Professor Emeritus, Rutgers University

Over the past half century, in America, there has been a gradual increase in interest and productivity in nursing research. More nurses have completed graduate education with preparation for research work. There has also been the development of keener awareness among nurses that continuing advancement of the nursing profession is in part related to recognition of nursing as a scientific endeavor as well as a humanitarian service.

A very brief review of the place of research in the recent development of nursing as a profession might provide a historical perspective for discussion of the question: Why Nursing Research? While there were a number of important studies of nursing activities and nursing schools in the 1920s and 1930s, for most nurses the idea of doing research was unthinkable.[1] Admission to most of the over 2,000 schools of nursing in general and mental hospitals did not require a high school diploma. There were only a handful of academic-based schools, the first started in 1919 at the University of Minnesota. Most of the teaching of nurses was done by physicians--who, therefore, controlled the content of what nurses were taught.

In the 1940s, World War II placed new demands upon nurses, many of whom carried greater responsibilities without supervision than ever before. On return from their participation in the war effort, a very large number of nurses used the G.I. Bill to seek preparation as teachers of nursing. Some sought degrees for study in "advanced clinical courses." Such programs were supported in universities for the first time by Bolton Act (1943)

and Mental Health Act (1946) funds. These nurses were exposed to "laboratory studies," and some of those few who were studying for Master's degrees completed Master's theses. The potential for nursing research began to be recognized.

In the 1950s, the *Nursing Research* journal was started--an act of faith on the part of the American Journal of Nursing Company. As Downs has reported, the country was scoured to find papers to be published in it.[2] There was a great deal of preaching on the application of the scientific method in nursing. However, there was beginning interest, recognition of the need and the possibility of nursing research, and a few nurses who were involved in nursing research studies.

In the 1960s, the theme was preparation for nursing research. Government funds became available for Faculty Research Development Grants (FaReDeGs) to prepare and stimulate collegiate faculty members toward engaging in research. Nurse Scientist grants became available to prepare selected nurses as researchers in scientific fields related to nursing. Nursing research projects were supported. The American Nurses' Association (ANA) and other organizations held research conferences which gave support and momentum to the few active nurse researchers and generated more widespread realization of the idea of nursing research. Also, in 1962, ANA conventions began to include clinical sessions in the convention programs, thereby inducing clinical nurses toward a more scientific consideration of clinical nursing problems which they reported in papers presented at these sessions. In the 1960s more nurses than ever before were preparing for and moving toward an investigative approach in their work.

In the 1970s, the emphasis was on the responsibility of nurse faculty, as members of the academic community, to engage in research and scholarship

along with teaching and community service. These long-established functions expected of faculty members--criteria for appointment, promotion, and tenure--began to be applied to nurse faculty. Previously, allowances had been made in view of the developing nature of the nursing profession. Several schools of nursing established nursing research centers, drawing into them doctorally prepared nurses from the pool of nurse researchers that began to develop in the 1960s.

In the short span of a half-century, nurses have moved from asking "What is nursing research? to engaging in it, and toward revitalizing the profession through a commitment to research and scientific endeavors..."[3] By 1981, Downs could report that in one year (1980) there were over 100 gatherings of nurses to present, share, critique, and discuss reports of research by nurses.[4]

In each decade in the past 50 years there have been nurses who were determined to advance nursing toward its goal of being a full profession. They faced up to their responsibilities and seized the opportunities of their time. Today, there are new urgencies, to be met by the present generation, for in the next half-century a base for nursing science should become firmly established. The progression of nursing is in that direction. The reasons for--the answers to--"Why Nursing Research?" are all related to that goal: developing the scientific knowledge that will give clear direction to the practice of nursing.

Nursing has an exceedingly difficult task. It is one that requires an understanding of the urgency, the necessity, and the intelligent dedication to nursing research and scholarship of every nurse faculty member in the 385 collegiate schools of nursing. Other nurses who work outside academia also share in that task, but collegiate faculty

have a more pressing responsibility for nursing research, as they are the gatekeepers of the profession and the guardians of its knowledge, a point to be expanded later in this paper.

Much is said in nursing literature about nursing's authority. "Nurses are saying that they lack the necessary authority and involvement to carry out their professional responsibilities."[5] The authority of nurses for nursing practice has many sources, but the most important of these is in the scientific knowledge derived from nursing research.[6] Nurses seek autonomy. There is no better way to demonstrate capability for self-direction than through nursing research. Nurses speak of accountability--to themselves, to peers, to the profession, and to clients. One accountability measure of the utmost importance is for nurses to be able to say, with relative certainty, that the effectiveness of nursing practices has survived the scrutiny of repeated scientific investigation. Nursing measures its advancement as a profession against Flexner's six criteria.[7] Two of these criteria are especially germane as answers to "Why Nursing Research?" "1) a profession involves essentially intellectual operations with large individual responsibility; 2) they derive their raw material from science and learning." Further, there is the "...ethical imperative to substantiate the safety and efficacy of...clinical practice...[and] the ethical and social imperative to do this in a manner which will be somehow cost-efficient in terms of money and personnel."[8] The foregoing major reasons for enlarging nursing's major research thrust are "but the tip of the iceberg," as the saying goes.

What nurses have set out to do is a herculean task, namely to combine the best of nursing's twenty-century humanitarian orientation with its twentieth-century scientific thrust; how to blend

or juxtapose, or alternate, and use both to benefit the health of the people? The humanitarian approach calls upon all of those characteristics associated with the image of women--intuition, tenderness, comfort measures, sympathy, nurturance, and interest in the utilitarian. Scientific work requires intelligence, intellectual discipline and competence, objectivity and detachment, perseverance, and career commitment.

In an important an interesting publication, the editor, Etzioni, differentiates semi-professions from professions and clearly relfects the characteristics just cited, ascribing those of the heart to semi-professions and those of the head to professions. In the former, women predominate (teachers, nurses, and social workers) and in the latter are the male-dominated professions (law, medicine, theology and architecture).[9] In the same volume, Simpson and Simpson pinpoint the nature of the significant difference:

> "...The service orientation of semi-professionals.. is an emotionally felt humanitarian urge to give of oneself, to relate in an intensely personal way to the recipient of the service. The act of service is its own reward, an expressive act, and it establishes a diffuse particularistic tie. The humanitarian service motive is thus quite different from the professional orientation. Professional activity is sometimes expressive, but the rewards are derived more from the exercise of skills than from the response of the client, who may sometimes be seen essentially as an object to whom skills are applied."[10]

In this quotation the difference is clear: Can the two orientations, juxtaposed in the quotation just cited, be blended?

The nursing profession has set doing so as its course. In its own way, the nursing profession is beginning to engage many more of its members in scientific investigations into the nature and treatment of those phenomena that lie within the domain of nursing. A recent publication of the American Nurses' Association, *Nursing: A Social Policy Statement*, defines nursing as "...the diagnosis and treatment of human responses to actual and potential health problems."[11] This definition, taken from existing nurse practice acts, lays to rest the long-standing, coercive question: "What is nursing?" The publication also provides an "illustrative list...of the human responses that are the focus for nursing intervention."[12] This list and other taxonomies of nursing diagnostic categories that are already published or becoming available suggest areas for clinical nursing research that are most urgently needed.[13] Such clinical nursing research is imperative to revitalize the identity of nursing and to ensure its development as a fully definitive, professional service, autonomous, co-equal with, and complementary to the practices of medicine.

This is a newly stated identity of nursing. Therefore it is relatively fragile, although a review of journal articles and books published by nurses over the past several decades--before the New York State Nurse Practice Act of 1972--substantiates that this target of nursing practices has been emerging for several decades.

In earlier centuries, beginning in A.D. 1 with the dawn of Christianity, according to Dock and Stewart, the aim of nursing was to heal.[14] This function began to be lost as medicine gained ascendency during the Industrial Revolution.[15] The exceedingly rapid development of medical science and related technology following World War II put the

healing function, albeit in different form, squarely in the domain of medicine. The vacuum created by the loss of nursing's twenty-century long healing function, which had noticeably declined in the twentieth century, left nurses in a major "identity crisis." The vacuum was filled by nurses taking on more medical-assisting activities and by their monitoring the technology and machines spawned by the demands of an expanding medical science.[16] Gradually, with the development of clinical specialization in nursing (beginning in 1943 but expanding in the 1960s to date) nurses--through their practices and in their publications--began to recognize, investigate, and define "...human responses to actual and potential health problems" as the focus for nursing practice. This focus is not entirely new as it was an ingredient in nursing's age-old healing function, but claiming it, seeking public recognition and social support of it, is barely a decade old.

The profession cannot take lightly the societal expectation that nurses will act as professionals with respect to the socially ascribed responsibilities contained in nursing practice acts. Society expects professionals to become the experts in matters related to the domain of inquiry and intervention that has been delegated to each profession as its focus of concern and practice. In a most general form, the focus of medicine is disease; the concern of law is grievance and injustice; the attention of theologians is to the soul and spirit; the work of architects is the function and forms of structure; and, according to the ANA *Social Policy Statement,* "...human responses to actual and potential health problems" is the bailiwick or special province of nursing in the health care arena.

Many kinds of nursing research are needed. The most important of these, however, is clinical

nursing research. Nurses are the persons to develop theories explanatory of nursing phenomena, and to test theory-derived practices for efficacy--Do they produce predictable short- and long-range beneficial effects upon the diagnosed and treated condition? The best intelligence of collegiate faculty members, working alone or in faculty groups and/or with clinical nurses, will be needed for this task. If each faculty member in the 385 collegiate schools picked one human response--within the scope of nursing--and spent an entire career elucidating it in all of its theoretical dimensions and practical implications, testing the practices and their effects again and again, there would then be the secure hope that nursing science would soon take a leap forward. There is a tendency among nurses to do a small study and then to move on to something else. What is needed now are thoughtful reviews of the published literature and of empirical evidence drawn from clinical situations, followed by carefully designed, long-term programs of research on particular human responses relevant to nursing.

You could help each other. SCCEN could keep a roster of the one particular human response which each person here plans to investigate for the next decade, so that an intellectually oriented, scientific community of nurses could evolve in this region. Each nurse here could pass on to the others useful information that is encountered in reading or in practice. It is not always easy for clinical practitioners employed in health care facilities to find the time to conduct research. But a recent publication of the Western Interstate Commission for Higher Education, *Assessing Patient Violence,* suggests a way that faculty can have the participation of clinical nurses in their investigations.[17] Fifty clinical nurses were involved with the project director; "each time they observed a violent incident in their work"

they filled out a questionnaire. The result, among other outcomes, was a beginning list of observable behaviors ("descriptions"), as seen in nursing situations. Analysis then moved toward laying out the patterns and variations of this one human response to actual health problems.

This beginning study is cited because it illustrates the complexity of study of human responses by nurses as compared to study of phenomena related to disease by physicians. For the most part, physicians seek cause-effect relations. The medical model, put simply, follows a sequence that starts with 1) observing symptoms, clustering these, giving the cluster a name or diagnosis; then 2)searching for causes of the symptoms; then 3) defining treatment that will remove or ameliorate causes, or if no causes are found, alleviating the symptoms. The phenomena that physicians study tend to be more concrete--they can be seen, felt, weighed, measured, and sometimes removed. They can be studied in cadavers, tested or measured through laboratory studies, x-rays, very sophisticated equipment, or put on slides and studied through a microscope. While physicians have to have knowledge of within-person biological and physiological processes, such knowledge rests upon scientific studies by a wide variety of scientists in addition to physicians. Medicine is more easily able to get on an "if you see this/do this" basis, once causes and effects are seen in relation to each other.

The nursing model (which is cited on pages 14-15 of ANA's *Social Policy Statement*) is of a different order--not better, nor unique--just different, since nursing's work pertains to phenomena that are different from but complementary to medicine's (human reactions to having a disease vs. the disease per se). The scope of human responses within the purview of nursing ranges from the physiological to the psychosocial. Particularly the psychosocial

responses, which are sometimes related to the physiological in a psychosomatic way, tend to be abstract, diffuse, consisting not only in cause-effect relations, but in patterns and pattern-variations and other kinds of relations.*

Furthermore, psychosocial phenomena are culture-bound which means that there are variations if not changes dependent upon ethnic group, particular situations, periods in time, and drastic changes in a social order that influence child-rearing, education, gender-typing, etc. In other words, clinical reactions of people to actual and potential health problems are complex, abstract, sometimes elusive,

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*A relation is a connection, a link, a tie, that when clearly formulated, shows how two different phenomena are associated. The formulation is the connection, i.e., the relation. Relationships occur between people; relations occur among phenomena, including behavioral manifestations of two or more interacting people. There are many kinds of relations: 1) cause-effect; 2) sequential--one item follows another in a logical sequence, e.g., Maslow's hierarchy of needs; 3) temporal--for example, the order of significant events placed on a timeline; 4) ordinal-for example, the rank order of birth of several siblings showing the interval between them; 5) frequency--showing the least to most of some phenomenon; 6) statistical; 7) thematic--the themes or patterns that connect the behavior of two or more people in a one-to-one or systems relationship, for example, need integrations, pattern integrations such as domination-submission; 8) process--a sequence of patterns in which the beginning pattern, given the necessary conditions, leads to a subsequent pattern or patterns conducing toward an end, for example, personality development, hallucinations.[18]

and often more amenable to explanation by hypothesis and inference than by established explanatory theory.

Scientific investigations into human responses to live situations seek to establish facts about the phenomena and regularities in their patterning, and in the conditions under which these phenomena occur, for example, in a human process such as personality development. This is indeed more difficult to do than carrying out a laboratory study in which careful measurements can be taken more easily, using available scientific instruments applied to more concrete, objective phenomena.

Descriptive studies are needed, for example, on human reactions of many patients of different ages, statuses, activity patterns, and ethnic groups. to long confinement in a hospital with more or less complete immobility. Such studies will show common, shared patterns of response (regularities), variations of these, and patterns unique to particular subjects in the sample. Observation, description, careful recording, data analysis, formulation of names for the patterns, and seeking theoretical explanations for their meaning and the purposes they serve is a place to begin. Descriptions of the way many patients (not just one case) manifest reactions to particular health problems are essential to the generation of nursing theory.

Of course, other kinds of studies are also needed. For example: 1) literature searches of the basic and applied sciences for available theories and methods of measurement, to be applied to nursing situations; 2) empirical-descriptive studies; 3) scientifically controlled and experimental studies.

Going beyond the clinical domain, there is a need for historical research--to recapture nursing's heritage, surveys of various kinds, demonstration projects, and the like. But the greatest urgency at the present time is for an abundance of clinical research. There is even some agreement among physicians on this point.[19]

Collegiate faculty, and especially university faculty members, particularly those who teach clinical courses, have a major responsibility to engage in clinical nursing research or scholarship related to clinical problems. Universities have the socially delegated mandate to preserve, extend, and communicate knowledge; thus, they have significant libraries and archives and conducting research is a major function of the faculty. Nurse faculty members cannot expect the status and privileges which society accords to university faculty members unless they meet the criteria by which faculties are judged. Such criteria when applied tend to assure that the social contract between society and universities will be honored. In the past six decades, allowances have been made for nurse faculty. They were considered newcomers and not quite prepared for academia. But with nearly 100 universities engaged in graduate education of nurses -- there is now a more rigid application of university criteria for appointment, promotion, and tenure of nurse faculty. And so it should be.

A spirit of inquiry which is an attitude of mind seen most often in researchers not only enlivens teaching but conveys to, and models for, students the nature of an investigative approach. Critical inquiry is essential for collegiate teaching at its best. A recent article by Pinch in *Nursing Outlook* points out theories that have been integrated into nursing curricula which deserve the most careful critique--in light of new information stemming from the feminist movement that

started in the 1960s--if student nurses are to be encouraged toward "autonomy and achievement."[20]

Research and scholarship, when pursued as a major commitment and a continuous endeavor by nurse teachers, hone their critical faculties to ever sharper levels of observation, inference, theory application, more penetrating analysis, evaluation, and critiques. It is axiomatic that those intellectual capacities which a person uses soon become refined intellectual competencies that become more powerful with continued use. Teachers need to research areas of concern to the profession that are not yet fully understood--which includes virtually all clinical phenomena within nursing's domain. Such nurses will find the time to concentrate, single-mindedly, for long periods of time, on one problem, seeking to understand and critique available knowledge, to raise critical unanswered questions, and to lay out ways to find answers to those questions. That is what research and scholarship are all about.

Besides, it is interesting work, full of the excitement of pursuit and discovery, followed by the satisfaction of sharing insights with others through publication. In the case of nursing, such activity will help to make nursing practice more systematic, more intellectually developed, more theory-guided and scientific, more definitive, more explicable, and less a commonsense, individualistic, ad hoc affair than it is now. Clinical nursing research pertains to the unfinished business of the profession--the heart of its intellectual work--namely, the search for regularity in those clinical phenomena which nurses diagnose and treat that are not understood, or are partially understood, or that have new variations due to changes in society, interpersonal relationships, or the advancing medical technology.

When collegiate nurse faculty are engaged in nursing research or scholarship, there is a tendency to communicate their excitement and investigative approach to students. Such students do not become "true believers," but tend to think analytically, for themselves, with a healthy skepticism, as their inquiring minds seek answers to puzzling questions which their observations foist on them. Such nurses not only sympathize with the difficulties of patients and families, but they seek to identify the nature of that difficulty. They look for and try to formulate the dimensions of the physiological, interpersonal, or systems mechanisms or processes that are at work and are reflected in the observable dilemma, in order to do something about them in a corrective way with the person or family. This, then, is a blend of the humanistic and scientific approaches noted earlier in this paper.

There are, of course, other options. Nurses can merely follow orders of other professionals, or they can merely be pragmatic*--doing what works now without considering short- and long-range consequences, or they can get mystical--saying, "Never mind, everything is going to be fine." It is true that some nurses, as their career progresses following graduation from undergraduate or graduate nursing education, become surprisingly enterprising, innovative, and make major contributions to the advancement of the profession--despite the quality of their teachers or school of nursing. However, most nurses tend to carry into their careers approaches in their work which are very similar to those of their teachers. In fact, there are some who sound like disciples! Faculty, of course,

*It is said that "devotion to the pragmatic reflects fear of theory"--and its application.

do not have total responsibility for what graduates of their programs do after leaving the school, but they do have responsibility, as a matter of first importance, for the quality of the educative exposure and for the students' intellectual, interpersonal, and clinical performance while in the school. Educative programs in which the teachers are involved in the intellectual discipline of research and scholarship, use an investigative approach to clinical data, have inquiring, critical minds with respect to theory, read widely and keep themselves informed about and active in professional matters as well as in issues, trends, and problems of a changing society tend to produce similar tendencies in students. Such students are most likely to involve themselves in nursing research.

There is a great deal of talk in nursing about the image of nursing--how to get more public respect for it as a new professional image. It is probably true that the public builds its image of nurses from what the public sees nurses doing. Not all people are hospitalized, so their observations of nurses derive from out-patient experiences, the media, and from reports of friends and family members. Of all of these, the media are a main resource for the public on reports of what's new in nursing. Caring, comforting, and sympathizing with the dilemmas of patients and families are not new--"nurses" have been doing that for twenty centuries. What the public expects of professionals is that they will investigate problems within their socially delegated field of work, discover new and better facts about those problems, generate more powerfully informative theories from those facts, and, as a consequence, innovate new and more beneficial practices that will help ameliorate or resolve the problems that were studied. Nursing research is a way to demonstrate to the public the caring that nurses talk so much about. Published research results, when they reach the public media,

particularly when these findings are essential for the public's health, are visible, tangible proof that nurses are professionals.

Only a few of the well over one million nurses in this country have influenced the image of nurses in this way. Yet it is a very potent way to change the image of nurses. A very good reason for engaging in nursing research is to produce something worth saying to the public in order to earn its esteem and to improve the public's health. The profession of nursing is in ascendency; there is a tendency toward social respect for knowledge which both the profession and society need. The image of nurse will improve as these two trends merge, as nurse researchers complete and publish clinically relevant studies. Nursing has not had an abundance of patrons willing to provide money to support nursing research. This too is related to the image of nurse as a caring, comforting, but non-scientific worker. Patron support is likely to come when nursing's research capability is demonstrated to the public more widely than at the present time.

Kinds of research other than clinical studies are also needed. Deans and nurse directors support budget requests on the basis of findings from surveys of need. Studies of the economics and general welfare of nurses, their numbers, types of education and employment, their opinions and satisfactions, are also needed. However, to date, there have been more of such studies than of clinical research.

Some nurses also engage in basic research; for example, nurse scientists who hold Ph.D.s in such scientific fields as physiology and biology. While the results of such research add to the fund of facts and scientific knowledge about human nature, applied clinical research findings are more immediately relevant to nursing practice. However,

any nurse should have the option to pursue any kind of research question that is of interest, and within the scope of his/her educational and research preparation. The development of graduate programs to prepare clinical specialists for practice in a part of the whole field of nursing (since 1943), however, has opened up in the past decade the possibility for more clinical nurse researchers. It is to this group that the profession looks for further advancement of nursing in the 1980s, through their efforts to extend and clarify the scientific knowledge that underlies all areas of clinical practice.

One of the recent trends has been the reduction in numbers of applicants to schools of nursing. While there are probably many interrelated explanations for this development, one reason is surely the fact that the established professions--medicine, law, architecture--and the basic scientific fields as well as business, are slowly opening their doors to enterprising, intelligent young women. Since the turn of the century and until the quite recent feminist movement, nursing could recruit and pick from a large number of women interested in a career. In fact, until World War II, nursing and teaching were the two main career options for women. As a consequence, nursing recruited a large number of very bright ones who, given other circumstances--other career options, ability to pay for a college education, social support for scientific study--probably would not have entered nursing. That day is over! Unless collegiate nursing education develops as a vibrant, intellectually stimulating, recognized combination of humanitarian orientation and scientific rigor, a field that nourishes, values, supports, and needs members having disciplined intelligence, there is the chance of regression in the advancement of the nursing profession. A research-oriented approach in undergraduate nursing education and an expected critical mastery

of research in graduate education will provide a challenge for recruiting and holding the most intelligent men and women in the profession. In those schools which are accepting basic nursing students who already have academic degrees (baccalaureate to doctorate) in other fields, there is already pressure for a more rigorous scientific and research orientation in basic curricula. Research is hard, cognitive work and the preparation, or lack of preparation, for it in nursing starts at the undergraduate level.

The hope is that collegiate faculty in schools of nursing can reconstitute themselves as a community of nurses dedicated to the development and teaching of nursing science with a humanitarian framework. Can that be brought about? It is common knowledge that free intellectual inquiry is stifled, that the mavericks in nursing have had little support, and that many have left nursing to enter fields more conducive to their flair. Research work requires a lot of thinking time; there are risks involved; pre-conceived time frames may have to be abandoned; the path to fully researched and verified outcomes is not linear, nor easy, and never certain. The direction or even the question raised for inquiry may collide with prevailing opinion. Other than in the matter of application of ethical guidelines in the treatment of human subjects, there is no right and wrong--there are data, and after rigorous analysis, there are findings which are the facts that the research yields.

There also is the possibility of serendipity--new ideas from accidental observations; and perseverance and luck lead sometimes to unplanned but important results. A climate of tolerance for diversity of approach, for styles of working, for research questions that may upset cherished ideas, and for flexibility would be in order--the

productivity of faculty members being what is evaluated.

Deans of nursing have much to do with facilitating faculty research by establishing the expectation of it, supporting a high standard of honest, rigorous performance, scheduling time for it, providing space, and seeking financial support for nursing research. Within such a framework faculty members should have independence and autonomy to pursue the puzzling research questions that interest them. In an earlier day in schools of nursing, a climate such as just proposed, leaving faculty members to be free, independent and autonomous, would have led to various forms of "Escape from Freedom." Today, however, nurses are seeking autonomy, independence, and opportunities to test their investigative competencies through nursing research.

Even so, creativity in the matter of research and scholarship can easily be stifled. There is sometimes an impatience in nursing for conclusive answers in the shortest possible time. Even literature research, which means an exhaustive search of all publications relating to one nursing phenomenon, takes time to abstract, simplify, and synthesize the essence of published theoretical understanding of a problem to discover the underlying pattern or process.

All of this means that everyone in collegiate schools of nursing must ask: "What is my part in expanding the frontier of nursing science?" This is the task of the present and succeeding generations of nurses.

Summary

Why nursing research?

1) to continue the historical progression from mere interest, to preparation for, to revitalizing

the profession through the results of nursing research;

2) to make possible the exceedingly difficult accomplishment of developing nursing as a scientifically directed humanitarian service;

3) to honor the social contract between society and the profession of nursing--as established in nurse practice acts--through scientific study of the phenomena and related nursing practices which society has ascribed to and for which it holds the nursing profession accountable, in the interest of improved health for the people;

4) to develop the scientific knowledge essential for understanding the clinical phenomena which nurses diagnose and treat, and for generating nursing practices that, upon evaluation, are shown to have corrective impact upon those phenomena, thereby improving the health of the people served by nurses;

5) to meet established criteria of colleges and universities in return for the status and privileges of being an academic faculty member;

6) to make a spirit of inquiry a central feature in schools of nursing, as evidenced in research by faculty members and reflected in an investigative approach in their teaching of students;

7) to help change the image of the nurse to a person who conducts research that yields information of benefit to the public, and thereby to strengthen public confidence in nursing;

8) to provide a place in nursing for using the broad diversity of intellectual capability of nurses in a wide variety of kinds of research from the simple to the most difficult cognitive work, and as a basis for continuing recruitment of the best and brightest;

9) to participate in and ensure the outcome of the urgent task which is before the present generation of nurses, namely to expand the frontiers of nursing science.

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NURSING RESEARCH AND RESEARCH RESOURCES FROM A NATIONAL PERSPECTIVE

*Doris Bloch, R.N., Dr.P.H.**
Chief, Research Support Section,
Nursing Research Branch, Division
of Nursing, BHM, HRA
Hyattsville, Maryland

I am especially pleased to be here today, because this first annual nursing research conference in the Southern region is truly a special occasion. It is also special to me that the Division of Nursing has ties to this event--for a number of years the Division supported a Research Development Project, with Audrey Spector, the Executive Director of the Southern Council on Collegiate Education for Nursing, as the Principal Investigator. The participants of this project agreed almost unanimously on the importance of regional conferences of this nature. Now that we have convened here in Austin, we can be proud that nursing research conferences have been established in all sections of the country. It is also significant that the two earliest series of nursing research conferences--those under the aegis of the American Nurses' Association and those spearheaded by the Western Interstate Commission for Higher Education--were both funded by the Division of Nursing.

Now, all of us are here because we care about nursing research, what it has done, and must continue to do. And, therefore, I hope you will enjoy with me a statement by William Allen, who is a professor of economics.

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*The editorial assistance provided by Evelyn Lazzari and the artwork of Jack Benson are gratefully acknowledged.

Allen has said:

> Research is to teaching,
> What sin is to confession.
> Without the one,
> You have nothing to say in the other.

To paraphrase Professor Allen, I now submit that:

> Research is to professional practice,
> What sin is to confession;
> Without the one,
> You don't have a sound basis for the other.

We in research are, and have to be, concerned with practice, and thus its outcomes, distinctiveness, effectiveness, and cost-effectiveness--the key issues on which this conference will focus. These are critical issues not only to the nursing profession and nurse researchers, but also to the funders and beyond that to the funders of the funders, namely members of Congress and the staff at the Office of Management and Budget. We in the Division of Nursing, the funders of research endeavors, are often asked by our own funders about our distinctiveness, and about how or if our research has measurable effect on practice. And, we are queried more and more often about how our research has saved health care dollars.

It is a valid question. It is also relevant to my topic of discussion, which is "Nursing Research and Research Resources from a National Perspective." I would like to approach that topic through the framework of "structure," "process," and "outcome," a framework that is helpful in many situations besides program evaluation. (See Figure 1.)

FIGURE 1

STATUS OF NURSING RESEARCH

1. Structure
   a. Researchers
   b. Settings
   c. Resources

2. Process
   a. Quantity
   b. Quality

3. Product/Outcome
   a. Body of knowledge
   b. Utilization

STRUCTURE

Nurse - The Researcher

So, we start with researchers. To begin with, what is a nurse-researcher? What are the qualifications for being a nurse-researcher? Most often, we think of the basic qualification as acquisition of a doctorate. But that is somewhat simplistic. There are some capable nurse-researchers who have only master's preparation. On the other hand, there are those who believe that postdoctoral experience is a necessity for independent research.

A model developed some years ago by the Southern Regional Education Board (SREB) shows very nicely the relationship between education and function.[1] For the research function it puts the nurse with a bachelor's degree in the role of research assistant; it shows the nurse with a master's degree as a collaborator; and the doctorally prepared nurse as an independent researcher.

In a similarly analytic vein, but in greater detail, a recent publication of the Commission on Nursing Research of the American Nurses' Association (ANA) also deals with the role of nurse-researchers.[2] The ANA model is considerably more involved than that of SREB, and it is well worth perusing.

A year or two ago, the ANA (with Division of Nursing support) updated the 1973 international directory of nurses with earned doctorates, published by the American Nurses' Foundation (ANF). Whereas only about 1,000 were included in the 1972 publication,[3] about 2,500 are listed in the later publication.[4] All of us here have noticed the increasing number of nurses who are aspiring to and achieving doctorates. In part, this is undoubtedly due to continuously increasing pressure within schools of nursing to require doctorates of nursing faculty. Division of Nursing and other government support for doctoral study has probably helped to encourage this trend.

As you know, this Division has funded predoctoral and postdoctoral fellowships for quite a number of years--and currently at an annual sum of $1 million. Many nurses have obtained doctorates with this kind of support; many others are pursuing advanced study programs without such assistance. Support specifically for minority nurses who are interested in mental health research is available from funds supplied by the National Institute of Mental Health to the ANA. The National Institutes of Health's largest support is for postdoctoral education, and nurses with relevant research interests are eligible to apply for such funds. However, research interests of the National Institutes of Health are, to a great extent, quite basic.[5]

We need to step up emphasis on postdoctoral study, because as yet we have but few experienced nurse-researchers; rather, we have many novices. The

Division of Nursing has a firm interest in helping these novices to become experienced researchers. Toward this end, we had hoped for some time to establish a new grant program of "New Investigator Research Awards," modeled on a program long active at the National Institutes of Health. To be eligible for such an award, the project's Principal Investigator (P.I.) must never have been the P.I. of a Public Health Service research grant. Certain limitations in terms of dollars and duration of support would also apply. Due to funding constraints, however, we have not as yet been able to institute this program.[6]

Nevertheless, I would suggest that those less experienced researchers might submit applications for research projects that are neither too large in scope nor too demanding in terms of budget. Even such small projects, however, will be expected to address significant research questions and to be very well developed methodologically. Like all other applications we receive for funding, small projects will receive rigorous scrutiny by the peer review groups.

The Settings for Research

The second aspect within our framework to assess the status of nursing research is the setting in which research occurs. Most research, as we know, is still carried out in educational settings. The discussion as to where nursing research should be undertaken and who should undertake it remains an active one. To me it seems clear that the research of a practice profession, such as nursing, must combine the talents and skills of both researcners and practitioners. For, again to paraphrase Proffesor Allen, without nursing research, there would be precious little to strengthen both nursing education and practice.

The current emphasis on strengthening research in educational settings is clearly evident. More and more faculty are taking leaves of absence to obtain their doctorates; promotion and tenure criteria are rapidly changing to embrace research endeavors and other scholarly activities; and obtaining extramural research grants is becoming an important element in faculty promotion. In addition, schools of nursing are increasingly employing a faculty member specifically charged with taking a lead role in furthering nursing research in the school. Such individuals may be accorded varying titles, such as "Research Coordinator" or "Associate Dean for Research." Research facilitators are also being appointed, although less extensively, in practice settings. For some years now, nurses who serve in such positions have met annually to address issues of common concern. The 1982 meeting will convene at Rutgers University in Newark, New Jersey, and interested persons should get in touch with Dr. Irene Lewis at the Rutgers School of Nursing.

The Resources to Conduct Research

The third structural aspect to consider in relation to research status is resources, and I have been asked to give that element some emphasis. Research does inevitably require some financial expenditure. But, depending on the scope of the research, a lot, or a lesser amount, or possibly only a little, money may be needed. Funds may be needed for project staff salaries, for secretarial time, for computer time, for research assistants, for consultants, for travel and mileage, and for books and equipment. As a generality, agencies in which nurses are employed have little if any money budgeted for research activities. Therefore, research may depend largely on what is called "soft money," or outside grants. Among the

participants at this conference, there must be any number who plan to start with small projects and small amounts of money, probably with funds internal to their institution, and gradually progress to increasingly rigorous extramural competition. Susan Gortner, associate dean for research at the University of California School of Nursing in San Francisco, has referred to this process as "cumulative competition."[7]

Now, a word about internal funds. Schools of nursing often have small amounts of seed funds for research purposes. Such funds may derive from alumni gifts or from indirect grant costs awarded to the university which are subsequently returned to the appropriate schools and departments. Universities also often have research seed funds for which nursing faculties can and should compete. Often such funds are specifically designated for novice researchers.

Other sources of small grants for nursing research are the American Nurses' Foundation, located in Kansas City, Missouri, and Sigma Theta Tau, nursing's honor society, located in Indianapolis, Indiana.

Further sources of research support are local, regional, and national non-nursing foundations and voluntary agencies, such as the Cancer Society, the Heart Association, and the March of Dimes. It is especially important to explore local and regional foundations.

Another financial source is industry--drug and food companies, for example. Some years ago, I am told, a cranberry juice company supported a study of the effect of cranberry juice on the pH of urine. I urge you to be innovative as you explore your local and regional resources, and persuasive as you convince your local industrialist

to assist you in solving an important nursing practice problem.

On the federal level, the United States Public Health Service, an agency of the Department of Health and Human Services (DHHS), is the most significant source of funds for health-related research. (See Figure 2.) Most prominent are the National Institutes of Health (NIH) with its multiple component institutes, such as the National Cancer Institute, and the National Heart, Lung, and Blood Institute. The Alcohol, Drug and Abuse, and Mental Health Administration (ADAMHA) comprises the three institutes implied by its name. Within the Health Resources Administration (HRA), the Division of Nursing's research grants program is the only research program. Still another potential source of federal funds for nursing investigation is the National Center for Health Services Research. This center is located in the Office of the Assistant Secretary for Health (OASH). All the various programs I have mentioned are components of the same Public Health Service Research Grants system. As Figure 2 indicates, when a grant application is submitted to any component of this Public Health Service system, it is actually mailed to the Division of Research Grants, which is administratively located at the National Institutes of Health. This division is the clearinghouse for all research grant applications destined for the various components of the system. Dual assignments are also possible when two funding components in the system have an interest in the same project. (See Figure 3.)

Still other research grants programs of interest to nursing exist within the Public Health Service, but outside the system just described. These include the Health Services Administration (HSA), the Administration on Aging (AOA), and the Health Care Financing Administration (HCFA). Moreover,

FIGURE 2

Public Health Service (PHS) Research Grants Assignment, Review, and Funding
A Nursing Research Grant Application

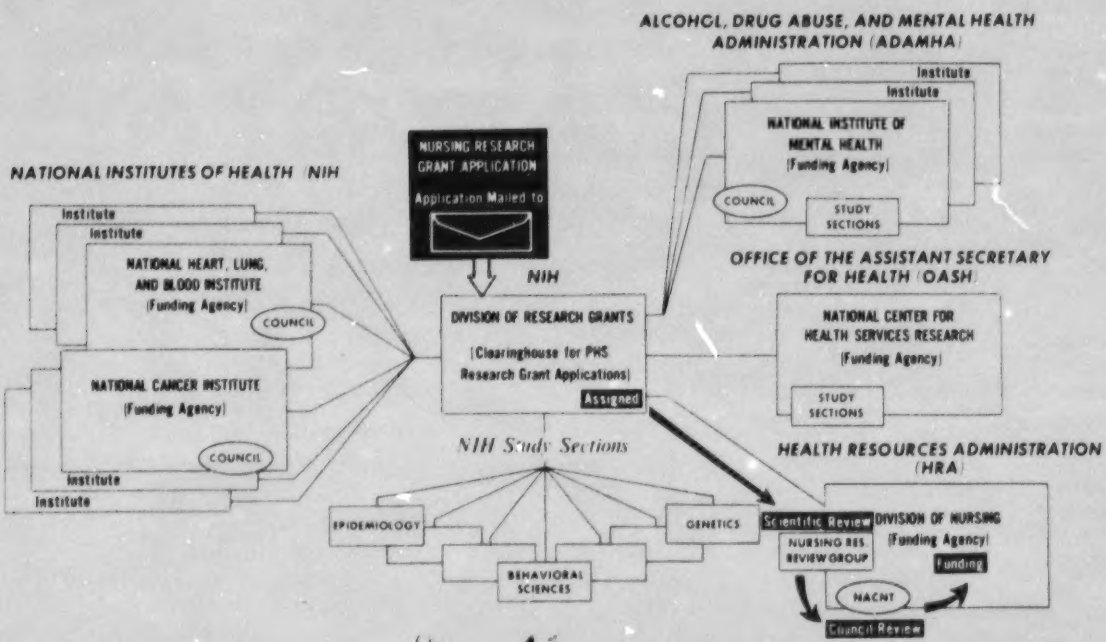
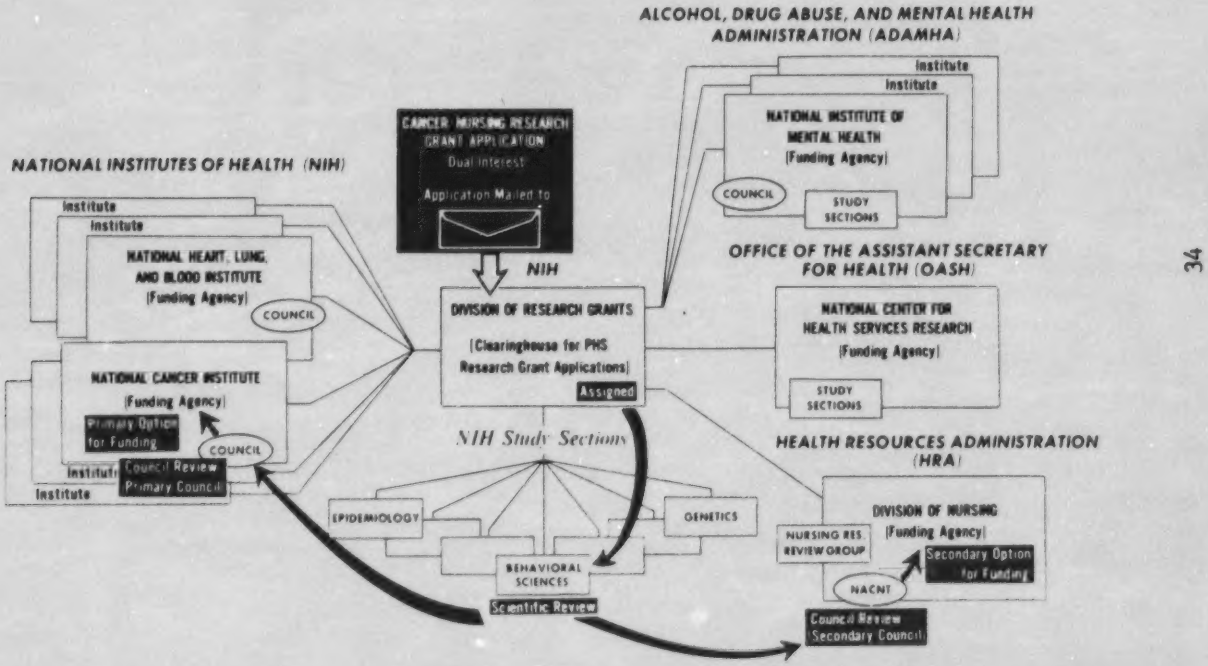


FIGURE 3

Public Health Service (PHS) Research Grants Assignment, Review, and Funding
A Dually Assigned Application



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there are research support programs in federal agencies other than the Public Health Service, including the National Science Foundation and the Department of Agriculture.

Now what of Division of Nursing funds for research? For several years, the Division of Nursing has had $5 million annually for research projects. We do not yet know how much is to be available for Fiscal Year 1982. It is correct to say, however, the major type of Division research grant is the "Nursing Research Project Grant." Each such grant supports a single research project. It should be of interest to you that Nursing Research Program Grants provide a mechanism whereby several investigators may pool their talents to work on a group of related projects under experienced leadership. Such projects are commonly referred to as "cluster grants." Because of the inherent complexity of such an endeavor, potential applicants must consult in advance of application with Division of Nursing research program staff.

There is a further source of research funding in the "Biomedical Research Support Program," administered by the National Institutes of Health. This is a program whereby institutions already receiving a certain minimum in allowable Public Health Service research grant support, are eligible for further funds. Let me give you an example: A school of nursing has for a certain year direct costs of over $200,000 in at least three allowable Public Health Service research grants (and this includes research grants from the Division of Nursing). This school is now eligible to apply for additional support calculated according to a set formula. To obtain one of these Biomedical Research Support Grants should be an important goal for schools of nursing, because it would provide them with some flexible research dollars.

A certain prestige value is implied as well, for a grant from the Biomedical Research Support Program indicates that a research institution has indeed "arrived." In 1981, five schools of nursing received such a grant.

Now how does one canvass for sources of research support? The best places to obtain information concerning support sources are libraries and the grants and contracts (or sponsored research) offices which are located in all major institutions. These offices may be extremely helpful to nurse researchers. If their personnel know you and are aware of your specific research interests, they may well be able to alert you to appropriate grant and contract announcements. Such offices usually scan a publication called *Commerce Business Daily,* in which "Requests for Contract Proposals" are announced; however, this publication is difficult for individuals to monitor. Relatively sophisticated researchers may find the *NIH Guide for Grants and Contracts* helpful and may want to be on its mailing list.

Numerous organizations publish books, pamphlets, and newsletters about available research funds. Many such agencies and organizations regularly ask us in the Division of Nursing to update information relative to type of research supported, available funds, deadlines for submission of grant applications, etc.

Specifically for federal support programs, the basic source of information is the *Catalogue of Federal Domestic Assistance.*[8] It is quite complete and well indexed and is found in the reference section of any library. Information about foundations is similarly extensive, the major source being the *Foundation Directory,*[9] a publication of the Foundation Center.[10] I should mention also

that the "Grantsmanship Center" publishes valuable information.[11] The bibliography on grantsmanship (Appendix A) lists a number of materials which we at the Division of Nursing have found useful.

PROCESS

We come now to point two in our research assessment framework. I refer to the process of research in terms of its quantity and quality. Clearly this process is not only healthy but continually improving.

The Quantity of Research

There is a tremendous amount of nursing research in universities and increasing activity in health care agencies. There are increasing numbers of "research facilitators," as we have mentioned. And, with this first annual research conference in the South, there are now general nursing research conferences in all regions of the country. In addition, the ANA Council of Nurse Researchers holds a very active national conference annually. Moreover, we note an upsurge of specialty nursing research conferences, such as the one concerned with cancer nursing research, and another on nursing education research. Sigma Theta Tau sponsors numerous "Research Days" all over the country. The number of nursing research journals has increased, as have the number of manuscripts they receive for consideration.

The Quality of Research

The quality of nursing research is showing marked advancement. No doubt this is the result of increasing research preparation, experience, and

sophistication of nurse researchers. And I believe that the peer review system, to which research grant applications to the Public Health Service and to other funding agencies (such as ANF) are subjected, further contributes to research quality. This idea is also being emulated and adapted by some schools of nursing in their review of applications for internal funding. I see this as a very positive development, since it affords an excellent learning experience for the potential investigator, and since it maximizes research quality. The refereeing process which many journals use to evaluate manuscripts is also a critical factor in research quality. So is, I believe, cooperative research by nurse researchers with similar interests and complementary expertise, as well as between nurse and non-nurse researchers. It may well be that the mark of the mature researcher is to be comfortable in soliciting the assistance and cooperation of a professional with complementary expertise.

NURSING RESEARCH OUTCOMES

The Body of Knowledge

Now that we have talked about research structure and process, we need finally to examine the status of nursing research in terms of its outcome or its product. How about the body of knowledge of nursing practice, education, and administration? How about the utilization of that knowledge? We must admit to ourselves that the status of that body of knowledge lacks the mark of certainty. Achieving such certainty and clarity is the major challenge in nursing research for the next few years. I think we may be on our way.

First, I want to point to the four anniversary issues of *Nursing Research* which appeared in 1977, since they carried articles summarizing research in the various nursing clinical areas; for example, public health and maternal and child nursing.

Using Nursing Research

We are quite proud of a project the Division of Nursing supported, which was entitled "Conduct and Utilization of Nursing Research (CURN)." The work was done under the auspices of the Michigan Nurses' Association; the Principal Investigator, Dr. Joanne Horsley, who is now at the University of Oregon, was then at the University of Michigan. The work on utilization entailed an extensive review of the literature as a preliminary for evaluating the suitability of nursing research for implementation into nursing practice.

One of the major results of the project is a series of 10 individual volumes which are now in the process of publication. Each volume deals with a specific nursing practice problem relative to which the project staff had concluded that there was sufficient sound research to permit implementation. Each of these publications describes the research base pertaining to the practice problem in a manner useful to the practitioner and appends the relevant research papers, with the goal of aiding the practitioner in the implementation of the research findings. These volumes constitute an exciting and innovative achievement, for they deal with such major nursing concerns as preoperative teaching, decubitus ulcers, diarrhea in tube-fed patients, and the collaborative setting of care goals.[12] Indeed, Professor Allen's credo works for nursing as well as economics.

Another exciting event in the assessment and advancement of nursing's body of knowledge is the development of the new *Annual Review of Nursing Research,* to be edited by Harriet Werley and Joyce Fitzpatrick. This ongoing assessment of the status of nursing research will constitute a major contribution since the most prominent nurse researchers will discuss the status of nursing research in their fields.

Such assessments are of cardinal importance. They point our way. We know that we need to systematically build up our body of nursing knowledge. To this end, it may become necessary to put strong focus on research into specific nursing practice problems, and to build programs of research in high priority areas, rather than scattering efforts.

A good example of such a program of research is the work of Dr. Jean Johnson. This researcher has consistently focused on preparation to help patients through threatening procedures, and her extensive series of related studies has encouraged many other researchers to replicate and extend her work. For example, Dr. Darlene Mood at Wayne State University has extended the Johnson research to patients on radiation therapy; and, using the Johnson theoretical framework, Dr. Geraldine Padilla at the City of Hope Medical Center in Duarte, California--joined by colleagues in a number of other institutions--has studied ways of reducing the distress of tube feedings.

For another example, I would cite the work by Regina Lederman (formerly at the University of Michigan and presently at the University of Wisconsin in Madison). Her research, which has been supported by the Division of Nursing for a number of years, deals with various ramifications of anxiety and stress during pregnancy and labor.

Clearly, nursing research is alive and getting livelier, and settings where it is being conducted are becoming increasingly hospitable. We have come a long way walking in a relatively short period of time, and it seems to me that we are now running!

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5. For information about any extramural research programs of the National Institutes of Health, write to:

   Dr. William F. Raub
   Associate Director for Extramural
   Research and Training
   National Institutes of Health
   Building 1, Room 108
   Bethesda, Maryland 20205

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APPENDIX A

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MEASUREMENT OF NURSING OUTCOMES: STATE OF THE ART AS WE ENTER THE EIGHTIES

Carolyn F. Waltz, R.N., Ph.D., F.A.A.N.
Professor and Coordinator for Evaluation
University of Maryland School of Nursing
and
Ora L. Strickland, R.N., Ph.D., F.A.A.N.
Doctoral Program Evaluator and Associate
Professor, University of Maryland
School of Nursing, Baltimore

In an attempt to assess the present state of the art of the measurement of outcomes in nursing, all 191 articles published in the three leading nursing research journals (*Nursing Research, Nursing in Research and Health,* and *Advances in Nursing Science*) between January 1980 and September 1981 were reviewed. Recognizing the potential limitations in this approach, it was still the authors' belief that since articles accepted for publication in these journals are subjected to peer review, their contents should serve as a prime indicator of what nurses are doing in the area of measurement as well as what their colleagues believe is worthy of sharing with other members of the profession. In addition, since previous attempts to assess the state of the art in nursing have employed a similar data source, comparison of information regarding the 1980s with that reported for earlier periods in time would be facilitated. Of the 191 articles published during this time period, 42 percent focused on some aspect of measurement. More specifically, 7 percent discussed what authors believe "ought" to be considered in measuring nursing variables; 28 percent reported findings from studies of outcomes; and 7 percent presented information regarding the development and/or testing of a tool--only 5 percent of the tools focused on the measurement of outcomes.

The review focused on the latter two types of articles, that is (1) the measurement portion of 54 research studies investigating clinical and/or educational outcomes, and (2) 10 articles presenting the results of efforts to develop and test outcome measures. In each case information was collected regarding the primary focus of the work, the conceptual basis underlying its development, and the manner in which measurement principles and practices were employed. The following questions were addressed:

Primary Focus of the Work

1. Was the outcome measured clinical or educational in nature?

2. Were multiple outcome measures employed?

3. Were multiple indicators of a given outcome measure utilized?

4. What type(s) of outcome measures were employed?

Conceptual Basis

1. Was a conceptual framework employed in developing the outcome measure?

2. Was the outcome measure empirically derived?

3. Did consistency exist between the conceptual and operational definitions of the outcome variable(s)?

Measurement Principles and Practices

1. Was there evidence that a measurement framework was employed?

2. Was the measure developed by the investigator

for use in the present study or had it been developed by others and used before?

3. Was reliability data obtained within the context of the present work?

4. What type of reliability data was obtained?

5. Was validity data obtained within the context of the present work?

6. What type of validity data was obtained?

7. Were reliability and validity procedures appropriately employed?

8. Did the authors specify the measures development and testing clearly enough to allow replication?

Findings regarding the state of the art were somewhat disappointing (see Tables 1 through 4), but useful in providing direction for future efforts. Although nursing is a practice-oriented profession, little evidence was found to support a focus on the measurement of outcomes of practice either clinically or educationally. Less than one-third of the articles published in the three journals between January 1980 and September 1981 focused on some aspect of outcome measurement. The majority (81 percent) of the studies of outcomes investigated clinical rather than educational outcomes. Five types of outcome measures were noted: attitudinal, behavioral, physiological, record reviews, and achievement. By far, the most frequently employed type of measure was the attitudinal/perceptual (61 percent of the cases), with data generally collected utilizing self-report techniques. There was an over-reliance on paper and pencil tests and, even though the majority of the studies reviewed were clinical in nature, physiological measures were utilized infrequently

TABLE 1

NUMBER AND PERCENT OF TOTAL ARTICLES ADDRESSING MEASUREMENT
(n = 191)

FOCUS	N	%
1. Outcome studies	54	28
2. Tool development and testing	14	7
3. Talking about	13	7
4. Development and testing of outcome measures	10	5

(in only 15 percent of the cases). Conceptual frameworks were employed in less than one-third of the research studies reviewed, and, when they were utilized, conceptual definitions leading to behavioral observation were too frequently operationalized by self-report measures. Similarly, the criterion variable(s) selected too often appeared to be those more easily obtained than those one would expect on the basis of the conceptual framework selected for the study. A very small proportion (21 percent) of the studies employed multiple outcome measures.

Only 5 percent of the total number of articles published in this time period dealt specifically with the development and testing of outcome measures, and in all cases the measures were clinical in nature. Forty percent of the outcome measures focused on the assessment of attitudes or perceptions, and none on achievement. Conceptual frameworks were more evident (60 percent) in the development and testing of measures

than they were in studies of outcomes (31 percent). Multiple outcome measures were not employed in any of the tool development efforts that were reviewed.

TABLE 2

FINDINGS FROM THE REVIEW OF OUTCOME STUDIES REGARDING PRIMARY FOCUS, TYPE OF MEASURE, UTILIZATION OF CONCEPTUAL FRAMEWORKS AND MULTIPLE MEASURES
(n = 54)

OUTCOME STUDIES	N	%
Primary Focus		
Clinical	44	81
Educational	10	19
Type of Measure		
Attitudinal/Perceptual	33	61
Behavioral	12	22
Physiological	8	15
Record Review	4	7
Achievement	3	6
Employed Conceptual Framework	17	31
Employed Multiple Outcome Measures	11	21

A number of violations in the employment of sound measurement principles and practices were noted in both types of articles. Too little attention was given to reliability and validity and the importance of determining them within the context of the present work. In the case of outcome studies, current data were reported for reliability in only 42 percent of the articles and

for validity in 41 percent; in the case of outcome measure development, current reliability and validity evidence was offered in 60 percent and 70 percent of the articles respectively. Thirty-two percent of the outcome studies reviewed relied solely on "old" reliability and validity data obtained with populations often quite different from their own.

TABLE 3

FINDINGS FROM THE REVIEW OF OUTCOME TOOL DEVELOPMENT AND TESTING ARTICLES REGARDING PRIMARY FOCUS, TYPE OF OUTCOME MEASURE, UTILIZATION OF CONCEPTUAL FRAMEWORKS AND MULTIPLE MEASURES
(n = 10)

OUTCOME TOOLS	N	%
Primary Focus		
Clinical	10	100
Educational	0	0
Type of Measure		
Attitudinal/Perceptual	4	40
Behavioral	2	20
Physiological	2	20
Records Review	2	20
Achievement	0	0
Employed Conceptual Framework	6	60
Employed Multiple Outcome Measures	0	0

It is interesting to note that in cases where the prime purpose was instrument development and

testing, no reference was made to "old" reliability and validity data when in fact it would seem appropriate to do so in concert with current data. Frequently, validity was investigated without reference to reliability, overlooking the important fact that reliability is a necessary but not sufficient prerequisite to validity. Even in those instances where tool development was the major intent, reliability and validity efforts were minimal, i.e., one procedure was employed for each and was usually in the form of interrater reliability and content validity. In no instance was criterion-related validity assessed, even though it is perhaps the most important type in regard to the measurement of outcomes.

TABLE 4

FINDINGS FROM THE REVIEW OF BOTH TYPES OF ARTICLES REGARDING RELIABILITY AND VALIDITY PRACTICES

	Outcome Studies (n=54)		Outcome Measures (n=10)	
	N	%	N	%
Current Reliability Data Reported	23	42	6	60
Current Validity Data Reported	22	41	7	70
Relied on Old Reliability and Validity Data	17	32	0	0

In those rare instances in which physiological measures were employed, almost without exception reliability and validity were not considered. In most cases, when it could be ascertained, tools were developed by the investigator for use in the present study and tools used in one study were not used in any of the others reviewed. On the basis of the information contained in the articles, it was virtually impossible to ascertain whether a norm-referenced or criterion-referenced measurement perspective was utilized and, on the whole, the general lack of clarity and scant information provided in all the articles leads one to seriously question the ability to replicate the works.

In summary, findings from the review of the outcome measurement articles published in the three leading nursing research journals between January 1980 and September 1981 indicated that:

1. Less than one-third of the articles published focused on some aspect of outcome measurement, and only 5 percent published in this time period dealt specifically with the development and testing of outcome measures.

2. Clinical outcomes were the focus for 81 percent of the studies of outcomes and for all tool development efforts.

3. Attitudinal/perceptual measures were employed in 61 percent of the outcome studies and 40 percent of the tool development and testing articles.

4. Physiological measures were employed in only 15 percent of the studies of outcomes and 20 percent of the tool development articles.

5. There was too heavy a reliance on paper and pencil and self-report measures in both cases.

6. Conceptual frameworks were more often employed in tool development efforts (60 percent) than in the outcome studies reviewed (31 percent), but in both cases when employed conceptual frameworks were frequently misused.

7. Twenty-one percent of the outcome studies and none of the tool development articles employed multiple outcome measures.

8. Current reliability data was reported in 42 percent of the outcome studies and 60 percent of the tool development articles.

9. Current validity data was reported in 41 percent of the outcome studies and 70 percent of the tool development articles.

10. Old reliability and validity data was the only such data reported in 32 percent of the outcome studies.

11. A number of violations in the employment of sound measurement principles and practices were noted in both types of articles.

12. There was a general lack of clarity and specificity in the articles reviewed.

Implications, Conclusions, and Recommendations

The major implications resulting from this review are self-evident. First, nurses have not given adequate attention to the measurement of both clinical and educational outcomes. This point is particularly cogent since nursing is a practice-oriented profession. Nurse researchers need to become sensitive to the investigation of research questions that not only build knowledge and theory, but which also have direct practical

implications that are measurable. The ultimate goal of research in any practice discipline is to provide a scientific basis upon which the actions and interventions of that discipline can be validated, extended, and/or changed. When there is little focus on studying the outcomes of practice, whether clinical or educational in nature, then little advancement will be made by the discipline in the quality of services provided to clients. In the future, nurses must not only continue to center research activities around developing an understanding of phenomena, but must actively study the significance of nursing actions in practical situations. In essence, nurses need to determine the impact of actions and protocols in clinical and educational settings.

The fact that a small proportion of the studies focused on the investigation of educational outcomes reflects the amount of importance placed on educational research in nursing. Although the investigation of clinical problems in nursing must assume special importance, it is essential that the necessity for investigating the impact of educational strategies and programs be salient as well. Nurse educators are just as accountable for their practice as educators as are nurses in clinical settings. Research on the outcomes of strategies and programs employed in nursing education are needed to improve practice in that area. Results must be widely disseminated in the research literature to encourage replication and application of those educational strategies for which there is evidence of effectiveness.

Another important implication of the findings is that nurses do not have a broad perspective of the types of outcome variables that are important for study. The over-reliance on attitudinal/perceptual outcome measures, the paucity of use

of physiologic measures, and the small number of studies employing multiple outcome measures represent a lack of integration and application of the broad scientific basis of nursing in the research context. Nursing is frequently referred to as a "biopsychosocial science." If this is the case then biologic, psychologic, and social outcome variables should all be readily apparent in the nursing research literature. In the real world of nursing, biologic, psychologic and social variables are related and seldom occur or change in isolation of each other. Studies which focus on only one criterion variable often do not contribute much to the elucidation of how the world really responds in accordance to the specified phenomenon that is the focus of study.

The obvious gaps in the type of outcome variables studied have implications for the nature of scientific gaps that may develop over time in nursing, if a concerted effort is not made to broaden the conceptual perspective that is addressed in the design of nursing research studies. The major purpose of nursing research is to develop knowledge about health care, the promotion of health over the lifespan, and nursing actions to enhance the ability of individuals to respond effectively to health problems (Commission on Nursing Research, 1981). This purpose will not be fulfilled through narrow perspectives and approaches to studying nursing outcomes. Although attitudinal/perceptual outcome measures are important, nurse researchers need to provide empirical evidence of nursing's actual and potential influence on the physical and social well-being of clients. The heavy reliance on self-report techniques by nurse researchers probably results from the bias toward studying attitudinal/perceptual outcome variables, which in many cases may be perceived as more easily obtainable than relevant physiologic and behavioral measures.

The paucity of a clearly stated conceptual framework and the frequent misuse of conceptual frameworks for the studies reflect the degree of emphasis that nurses have placed on the establishment of an appropriate link between conceptualization and research design, and indicates a lack of sensitivity of some nurse researchers to the needed link between conceptualization and measurement of variables. The frequent inconsistency noted between conceptual definitions and the operationalization of concepts has negative implications for the validity of findings and interpretations. Therefore, the theoretical contributions of such studies are rather obtuse and have limited value in the testing and building of theory, and in turn, the practice of nursing. The fact that conceptual frameworks were often explicated in studies which focused on tool development is an encouraging note in this regard.

The articles in the three research journals surveyed indicated that their authors were not fully attuned to applying basic measurement principles and practices. Since reliability and validity of measures were either not provided, not investigated concurrently, or only reported in terms of previous studies and populations, this indicates that nurse researchers often do not rigorously assess measures that are used to operationalize variables. The heavy dependence on evidence of content validity of measuring tools does not exemplify recognition by nurse researchers of the high degree of importance that construct and criterion-related validity have in the measurement of outcome variables. Although evidence of content validity is important in the measuring tool, it is focused upon the representativeness of the content sampling, i.e., the items included on the tool rather than on empirical evidence that the tool actually measures the intended concept. The best evidence of the validity of measurements includes

reference to empirical consistency to the objective of the measuring device, such as that which is obtained by testing for construct and criterion-related validity. Content validity is an important consideration in the construction of measures and in the interpretation of results of measurements; however, it is not the best indicator of validity but primarily supports the "content relevance" or "content representativeness" of a measure (Messick, 1975). When nurse researchers increase the rigor in the manner in which they address the measurement properties of the measuring devices used, then a higher level of confidence can be placed in the findings and the interpretations that are drawn from these findings. Emphasis needs to be placed on making sound measurement principles and practices an essential component of the nurse's repertoire. Hence, measurement needs to become essential content in nursing research courses as well as a course focus in its own right.

Although many of the problems noted in this review may result from nurses' lack of preparation and experience with measurement per se, many may also result from the dilemmas encountered in undertaking a rigorous measurement development and testing effort when resources are scant. If nurses make a concerted effort to share resources by selecting, further modifying, and testing existing measures rather than constructing their own, and/or by pooling resources to simultaneously develop and test a measure or set of measures in a variety of settings with varied and different populations, much progress can be made in this area. To facilitate such efforts, one might consider the creation of a regional or national clearinghouse for tools and other measures used in nursing research. In addition to the collation of measurement materials, such a clearinghouse could also serve as a screening agent for the quality of what is included, as well as serve a coordinating function in putting

nurses interested in the measurement and study of specific outcomes in touch with others with similar interests.

Similarly, more should be done to foster the dissemination of the results of such efforts in an accurate, timely, and relevant manner. As is evident from this review, one cannot rely on journals alone to accomplish this. An interesting note in this respect is that in those instances in which a particular research journal announced an editorial policy regarding a focus on instrumentation and/or included a number of articles regarding what ought to be, the content of the "oughts" was not uniformly reflected in what was subsequently published. This was especially true in the areas of reliability and validity. More critical reviews of journal articles by readers as well as referees are needed, with letters to the editor expressing strengths noted as well as deficiencies in what is published. More meetings and symposia such as this devoted solely to the topic of measurement with proceedings to disseminate the results even more widely are indicated as are more efforts to compile information regarding instruments and their testing like the two volumes prepared by the Western Interstate Commission for Higher Education. Balance in efforts needs to be restored by advocating a broader perspective regarding what should be undertaken by those who develop and test measures.

Considering the implications of the results of this assessment of the present state of the art of the measurement of outcomes in nursing, several recommendations are apparent:

1. Nurse researchers should give more attention to the measurement of both clinical and educational outcomes. In addition, the measurement of educational outcomes needs to be legitimized

and stressed as being as important as the measurement of clinical outcomes.

2. Nurse researchers should broaden their perspective about the type of outcome measures that are important for study so that efforts will be more balanced toward the consideration of behavioral and physiologic outcomes.

3. Efforts should be made to encourage an increased use of conceptual frameworks in studies, and consistency between conceptual frameworks and the measures that are employed to operationalize variables.

4. More rigor should be exercised in the application of measurement principles in nursing research studies. This goal would be more likely realized if measurement becomes essential content in nursing research courses as well as a course focus in its own right in nursing graduate programs.

5. Nurses should make a concerted effort to share, modify, and utilize existing tools and measures in a variety of settings and with varied populations. The creation of a clearinghouse for tools and other measures would facilitate this effort.

6. Nursing research journals should encourage the application of more rigorous measurement principles in articles that are published.

7. More nursing workshops and symposia should be focused on measurement and instrumentation in nursing.

In essence, nurses need to give measurement the attention and support it warrants clinically and educationally if the important goal of documenting the outcomes of practice is to be accomplished.

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PERCEIVED DIMENSIONS OF NURSING PRACTICE: A FACTOR ANALYTIC STUDY

Barbara J. Boss
University of Mississippi Medical Center
Jackson

The objective of this study was to investigate the application of a factor analytic approach to explore the nature of a complex job performance criterion and to determine the dimensions (components) of this criterion. Specifically, this study was designed to: (1) investigate the dimensionality of the criterion variable--competent nursing practice; (2) examine the homogeneity of the dimensions on a cross-validation sample; and (3) determine the similarity of subscale scores among faculty from the three types of educational programs (associate degree, baccalaureate degree, and diploma).

Nursing practice has not been used as a criterion variable in prediction studies. This has been the least investigated area of prediction in nursing. Abdella (1961) suggests that the absence of research is due to a lack of a clear definition of nursing. Yet in medicine and the health-related professions that also lack clearly defined domains of clinical practice, there have been at least preliminary attempts to study the nature of competency in clinical practice (Hunter, Salkin, Leve, & Hildebrand, 1975; Johnson & Hurley, 1976; Lind, 1970; Price, Taylor, Richards, & Jacobsen, 1964; Schatz, 1967). In these disciplines there have also been efforts to investigate methods for measuring practice competency (Blum & Fitzpatrick, 1965; Brumback & Howell, 1972; Cowles & Kubany,

1959; Crocker, Muthard, Slaymaker, & Samson, 1975; Howell, Cliff, & Newman, 1960; Johnson & Hurley, 1976; Newman, 1951; Taylor, Lewis, Nelson, Longmiller, & Price, 1969; Wightman & Wellock, 1976). Measurement techniques and statistical procedures that will help in developing competency criteria do exist (e.g., Brandt, 1971; Brumback & Vincent, 1970; McDermott, McGuire, & Berner, 1976; Merabian, 1969; Oratio, 1976; Price, Taylor, Richards, & Jacobsen, 1964; Schatz, 1976; Valdez, 1977). Thus, similar efforts in nursing would seem timely and appropriate.

Experts in the area of criterion development have offered some guidelines for attacking the problem of identifying and quantifying a criterion of competency. Dunnette (1963) has implored researchers exploring the criterion problem to stop searching for the single criterion. Dunette (1963), Ghiselli (1956), Thorndike (1949), and Toops (1944) have proposed that successful job performance is multidimensional.

Since experts in the area of criterion development have stressed that the ultimate conceptual criterion of job performance competency is multidimensional, an empirical approach was applied to criterion development using a factor analytic technique that allowed identification of the dimensions composing competent nursing practice. To utilize a factor analytic approach that groups multiple criterion elements on the basis of their intercorrelations requires a list of performance criteria. These performance criteria are often available as items composing existing instruments. The data intercorrelated in the factor analysis were ratings of the relevance of each performance criterion to competent job performance.

The respondent pool consisted of 1,078 faculty members from 85 randomly selected nursing programs

representing the three types of educational programs in nursing. These faculty members rated each item composing the Clinical Nurse Rating Scale and the Nurses' Professional Orientation Scale on its importance to competent nursing practice. The five-point rating scale ranged from undesirable to extremely important.

For the analysis, the respondent pool was randomly split in half. A common factor analysis was conducted on the item ratings from the first group to identify the dimensions of nursing practice competency underlying the two scales. The factor coefficient weights were used to create subscales. Internal consistency estimates and item-total subscale score correlations were calculated for the cross-validation sample to examine the stability of the item groupings across samples from the same population. Using a nested design multivariate analysis of variance, the differences in mean subscale scores among faculty members from the three types of nursing educational programs were also investigated.

Using common factor analysis, five factors emerged. Factor 1 represented an interpersonal dimension of practice competency involving patients, family members,nursing colleagues, and other peers. Items on Factor 2 involved those that reflect misconceptions and myths about nursing. The cognitive-leadership component of competent practice was represented by Factor 3. Factor 4 was composed of items reflecting dependent nursing functions involving physicians, technical proficiency, and fulfilling an employer's job description. For these first four subscales, internal consistency estimates using coefficient alpha ranged from .81 to .91 and the item-subscale correlations consistently were highest for the subscale on which the item loaded. Factor 5, an

apparently unstable factor, had a coefficient alpha of .47 and inconsistent highest item-subscale score correlations with the factor. No significant differences were found among the mean subscale scores for faculty members from the three types of educational programs.

It was concluded that four of the five factors were stable and that these four stable factors represented dimensions of competent nursing practice. Finding that faculties did not differ on mean subscale scores supported the initial assumption that nursing educators as a group were the appropriate population to sample. However the fact that faculty from the three educational programs did not significantly differ on their mean subscale scores has serious implications for the nursing discipline. Since faculty across programs have similar beliefs about competent practice and it has been demonstrated that students take on faculty beliefs as they progress through their nursing program (Crocker & Brodie, 1974), it becomes more clear why graduates from the three types of educational programs may well perceive competent practice similarly. This helps explain why so much controversy exists among nurses regarding the issue of which educational preparation should be required for entry into practice.

This study demonstrated the usefulness both of using existing instruments and of applying an empirical factor analytic approach to identifying the dimensions of a job performance criterion such as competent nursing practice. The results futher demonstrated that the factors obtained can be stable across samples from the same population.

From this study, the position that successful job performance is multidimensional is supported. No single performance criterion could adequately

measure the three dimensions of competent nursing practice identified in this study.

(Note: References not furnished.)

PHYSIOLOGICAL INTERVENTION IN THE MOTHER WITH INADEQUATE LACTATION

Ellen B. Buckner
University of Alabama in Birmingham

Perceived or actual insufficiency in milk production is a common reason for mothers to abandon breastfeeding. A complex interaction of physical, psychological, and physiological factors create vicious cycles which cause the problem to worsen once it begins. Inadequate milk production causes the infant to nurse poorly and appear to "fall asleep at breast" which further diminishes the stimulus to produce milk. If the let-down reflex is ineffective, the breast is not emptied relaying a false message that milk is not needed. The anxious or depressed mother frequently eats poorly and rests poorly, both of which contribute to decreased production; infant irritability increases and the mother's anxiety increases.

Nursing assessment and intervention must be directed toward all facets of this complex problem. Specific actions directed toward physical or psychological factors and such supportive intervention as assuring adequate diet are always indicated. However, this type of care is frequently ineffective in breaking the vicious cycles which have developed. This study was initiated to determine if physiological intervention could be effective in altering the course of breastfeeding when inadequate lactation occurs.

Nine women were followed at approximately weekly intervals and measurements of the prolactin response to suckling and milk yield at feeding were made. Each woman initially presented with insufficient milk for her child as validated by slow weight gain (less than four ounces per week) or need for formula supplementation. Other parameters validating the diagnosis included excessive infant irritability, poor nursing, frequent nursing (more often than every two hours), and infrequent voids or stools. Milk yield at a feeding was measured as the change in infant weight from before to after nursing plus the amount which could be obtained by pump after the feeding. The average initial milk yield for those women in whom valid data were obtained was 1.88 $\pm$ 0.9 ounces (n = 8). Maternal serum samples were drawn before and after nursing and baseline and peak prolactin levels obtained by radio-inmunoassay. Baseline levels of prolactin had a mean value of 51.4 $\pm$ 30 ng/ml and a range of 19-103 ng/ml. Initial prolactin responses to suckling (PRS) were calculated as the difference in baseline and peak values and had a mean value of 158 $\pm$ 175 ng/ml and a range of 12-442 ng/ml. Changes in baselines and PRS after intervention were variable and unrelated to outcome.

A variety of interventions were used as indicated and when accepted by individual mothers. These included: 1) use of oxytocin nasal spray to improve milk let-down and breast emptying; 2) use of Lact-aid® nurser to provide positive reinforcement to infant's suckling of breast, and 3) use of adjunct nipple stimulation with an electric breastpump after nursings and/or between nursings.

Subjective evidence of improvements in milk production occurred in six of seven women who worked to increase milk production; two subjects served

as controls and did not attempt to improve production significantly. Four subjects were able to completely breastfeed without formula supplementation. Three subjects and one control continued breastfeeding with supplementation and one control stopped breastfeeding.

Changes in milk yield validated these subjective findings. In those women who were completely successful, mean milk yield increased 3.0 ounces; in those who worked to increase production but were not completely successful, the average increase was 1.38 ounces. In the two control subjects, the milk yield decreased.

Baseline and peak prolactin levels showed marked variation between subjects and in the same subject as milk production changed. In some cases as milk supply increased, baseline prolactin levels decreased. In some cases breastfeeding success followed adequate prolactin responses to suckling, but in other cases breastfeeding was not dependent on large peak prolactin levels.

Intervention in women with poor initiation of lactation is possible and many mothers with this problem can realize increased production. The use of oxytocin nasal spray is simple, well-accepted by mothers, and is often effective in increasing milk yield. For some mothers, however, multiple modalities are necessary to increase lactation to sufficient levels. The choice of intervention must be guided by the woman's own desires and the infant's nutritional needs; the goal of intervention is a feeding choice which is good for both mother and child.

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THE RELATIONSHIP BETWEEN THE USE OF A SUPPORTIVE-EXPRESSIVE PROCESS GROUP FOR FAMILIES OF CANCER PATIENTS AND HOPELESSNESS, BELIEFS ABOUT CANCER AND ATTITUDES ABOUT CANCER

Nancy Burns
The University of Texas at Arlington
and
Mary Duffy
The University of Texas at Austin

Cancer, a very dreaded disease, is associated by most people with death, uncontrollable pain, body mutilation, physical deterioration, hopelessness, helplessness, social isolation, and abandonment. These beliefs persist even if the possibility of cure is great. The impact of a cancer diagnosis is intense, long lasting, and affects the family as strongly as the patient. How the patient and family deal with this situation is dependent on many factors: previous experiences in dealing with difficult situations, ego strength, effective coping strategies, availability of social supports, level of understanding and education, financial resources, philosophy of life, and orientation toward health (Antonovsky, 1979). However, even people who have many strengths in these areas may be devastated by a cancer diagnosis if they have negative beliefs about it. Thus, people who manage other situations well, may not manage the cancer situation well (Krant, et al, 1976; Sheldon et al, 1970). It may shatter their entire view of the world--their sense of coherence--as Antonovsky refers to it.

The consequences of cancer can be long lasting, perhaps permanent. Family dynamics may never return to the pre-illness state. Sometimes, families split apart (Cohen and Wellisch, 1978; Lansky, et al, 1978; Thomas, 1978). Both mental and physical health can deteriorate. Studies indicate that

even after the death of a cancer patient, family members report prolonged grief, nightmares, difficulty reentering the social world, and increased incidence of major physical illness (Vacon, et al, 1977).

This investigation was designed to determine if a support group for families of cancer patients could improve emotional responses to the cancer situation. The problem of study was: "Can participants in a supportive-expressive group for families of cancer patients improve the family member's ability to cope with their situation as demonstrated by decreased negative beliefs about cancer, decreased hopelessness, and decreased negative attitudes about cancer?"

A quasi-experimental, pre- and post-test design with a nonequivalent control group was used to study the problem (n = 58). The experimental group was an open-ended group with new participants entering each week. The control group participants were taken from people who arranged to attend the group but failed to come. Three hypotheses were developed:

1. Family members of cancer patients who have participated in a supportive-expressive group for a minimum of two sessions will be no different in magnitude of negative beliefs about cancer as measured on the Cancer Beliefs Questionnaire when compared to a control group who has not attended group sessions.

2. Family members of cancer patients who have participated in a supportive-expressive group for a minimum of two sessions will be no different in hope/hopelessness scores as measured on Beck's Hopelessness Scale than a control group who has not attended group sessions.

3. Family members of cancer patients who have participated in a supportive-expressive group for a minimum of two sessions will be no different in attitudes about cancer as measured by the Cancer Attitude Questionnaire than a control group who has not attended group sessions.

Data collection tools consisted of demographic information and three scales: a semantic differential--Cancer Beliefs Questionnaire (1980)--developed by one of the investigators (Burns, 1981); Beck's Hopelessness Scale (Beck, et al, 1974); and Hoffmeister's Cancer Attitude Questionnaire (Hoffmeister, 1976). Alpha and split-half reliabilities and factor analyses were done on this study sample to verify what was found in previous studies. Construct validity and acceptable reliabilities were established.

Data were collected on both groups at the beginning of the investigation. Post-test data were collected on both groups after the experimental group had completed two group sessions. Hypotheses were analyzed using analyses of variance and covarience. No significant differences were found between experimental and control groups. Secondary analyses included Pearson correlations, discriminant analyses, and cannonical correlations. These analyses revealed significant relationships between factors in the various instruments and between factors and several demographic variables.

The real significance of the study lay in the development of consistently high internal consistency and test-retest reliabilities as well as the consistent documentation of three orthogonal factors of the Cancer Belief Questionnaire in different samples of different sizes. The Cancer Belief Questionnaire also correlated highly with

several factors in Beck's Hopelessness Scale and Hoffmeister's Cancer Attitudes Questionnaire. This instrument holds great potential value for nurse researchers in the field of cancer nursing investigations.

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JOB SATISFACTION IN NURSE FACULTY: TEST OF A REVISED THEORY OF WORK MOTIVATION

Shirley J. Carey
Emory University

The principal aim of the research project was to determine how the structure of the faculty organization influences work response patterns in nurse faculty. The conceptual framework for the study was the "Job Characteristi[illegible] Model of Work Motivation" developed by Hackman and Oldham (1974). The Hackman and Oldham model attempts to integrate much of the previous research on job satisfaction and work motivation. It is dynamic and interactive, in that the individual's satisfaction is a function of perceived characteristics of the job interacting with the individual's values and experience to produce personal work outcomes. The research was based on a revised model of work motivation developed for professional employees and sought to clarify how specific aspects of the faculty role interact with professional values and experiences to produce work outcomes.

A questionnaire, based on the revised model, was used to generate quantitative measures that describe the work context, psychological responses, and work outcome dimensions. Four schools of nursing located in the Southern region participated in the study. Two were organized by program structure, two were organized by departments. The schools offered baccaluareate and master's degree programs in nursing and were accredited by the National League for Nursing. Nurse faculty employed within the four schools comprised the sample (n = 169).

The following hypotheses were tested:

1. Nurse faculty employed in schools of nursing organized by program structure will report lower levels of job satisfaction than nurse faculty employed in schools organized by departmental structure.

2. Nurse faculty with primary responsibility in baccalaureate programs will report lower levels of job satisfaction than will nurse faculty with primary responsibility in graduate programs.

3. Nurse faculty prepared formally for the nurse educator position will report higher levels of job satisfaction than nurse faculty prepared as clinical specialists.

4. Nurse faculty with doctoral preparation will report higher levels of job satisfaction than nurse faculty prepared at the master's level.

Analysis of variance procedures were undertaken to define how each category of respondents defined the context of work, psychological

responses, work motivation, and several aspects of work satisfaction.

Partial correlation and multiple regression procedures were undertaken to replicate the validity procedures reported by Hackman and Oldham (1974) related to the conceptual model.

Support for the first two hypotheses was demonstrated on several components of work satisfaction. The last two hypotheses were not supported. Support for the revised model of work motivation was demonstrated. Conceptualization of how the concept of competency influences faculty responses was not clarified.

Recommendations related to the structure of work required of nurse faculty and the structuring of nursing departments within the academic environment were presented. Further, suggestions related to the informal structure and methods for increasing work satisfaction and motivation within the schools were discussed. Recommendations related to further developments in the model of work motivation for professional employees were included in the dissertation research undertaken by the investigator.

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THE ROLE OF SUPERVISOR IN HOSPITALS OF VARYING SIZES

Shirley J. Carey
Emory University

The principle aim of the research project was to determine how specific organizational, interpersonal, work behavior, and job incumbent variables affect supervisory manpower utilization in hospital nursing service departments. Findings of other researchers indicated that nursing service departments are generally poorly managed and that the cost-effectiveness of the department, morale, turnover rate, and quality of nursing care provided were strongly influenced by the behavior of nursing service management personnel (Monahan, 1968; Wandelt, 1980). This research project sought to describe the role of the supervisor and to determine how the role as it is defined influences work response patterns of those in the position and those in complementary positions within the nursing department.

A questionnaire, based on the Miller-Carey Model of Work Role Expectations (1980), was used to generate quantitative measures that describe the role, the work, the individual's responses to work, and levels of professional need fulfillment emanating from work. Nine randomly selected general service hospitals in Georgia participated in the study. Three of the hospitals contained between 523 and 593 beds, three contained 338 to 496 beds, and three contained 164 to 232 beds. Members of the nursing service management staff (charge nurses, head nurses, supervisors, administrators) comprised the sample (n = 312).

Factor analysis procedures were undertaken to identify the traits and behaviors ascribed to the role of the supervisor in the hospital setting

(descriptive role expectation), and to identify the role as the respondents perceived it should be (prescriptive role expectation).

Analysis of variance procedures were undertaken to identify how each category of respondents defined the context of work, cognitive and affective responses, and several components of professional need fulfillment.

Correlation, factor, and multiple regression analysis procedures were undertaken to determine the validity of relationships posited in the Miller-Carey Model of Work Role Expectations.

Significant differences in the prescriptive and descriptive role expectations for the supervisor position were found. Significant differences in the work context defined by charge nurses, head nurses, and supervisors were found. No significant differences in cognitive or affective response patterns defined by respondents in each position were identified.

Significant differences in several components of professional need fulfillment (professional recognition, social recognition, organizational usefulness, and pay compensation) defined by those in each management position were found.

Significant differences between means were found on several need fulfillment scales when size of the institution was considered. Nurses employed in medium-sized hospitals reported higher levels of professional need fulfillment than nurses employed in large hospitals. Although the differences were not significant, nurses employed in small hospitals also reported higher levels of need fulfillment than nurses employed in large hospitals.

Dissonance between the prescriptive and descriptive role expectation was found to strongly influence professional need fulfillment. Nurse supervisors identified as having high dissonance reported significantly higher levels of need fulfillment than nurse supervisors reporting low dissonance.

A relationship between attitude toward the profession of nursing and degree of professional need fulfillment reported by nurses in management positions was found. Nurses reporting a positive attitude toward nursing reported significantly higher levels of need fulfillment (13 of the 14 scales) than nurses reporting a negative attitude. In addition, nurses reporting that "nursing has problems that trouble me a great deal" were also found to report significantly lower levels of need fulfillment than nurses reporting the most positive attitude toward nursing.

Recommendations related to the structure of work required of nurse managers and the restructuring of the supervisor role within the hospital work environment were made, chiefly that hospitals should clearly define role expectations of middle managers and provide preparation for those promoted to the positions.

Recommendations related to the applicability and predictability of the Miller-Carey Model of Work Role Expectations for professional employees were set forth.

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LEVEL OF NURSING EDUCATION AND PERCEPTIONS OF NURSING PERFORMANCE

Kathryn Suggs Chance
Georgia State University

Since 1965 the American Nurses' Association has supported the position that minimum preparation for professional nursing practice is the baccalaureate degree in nursing. An assumption underlying this position is that baccalaureate preparation better prepares the nurse to deliver professional nursing care than does associate degree or diploma preparation. However, in the nursing practice setting, levels of practice have not been differentiated according to level of nursing preparation. The purpose of this study was to determine whether self-perceptions and supervisor perceptions of nursing performance differ according to level of nursing preparation; to determine whether variables other than level of preparation affect perceptions of performance; and to compare self and supervisor perceptions of nursing performance.

The conceptual framework was a phenomenological approach to Fishbein and Ajzen's belief, attitude, intention, and behavior framework. Beliefs about the consequences of nursing behaviors directly influence attitudes toward performance. These meld to influence behavioral intention regarding performance, which is the forerunner of the behavior--nursing performance. Behavioral intention regarding nursing performance may be measured phenomenologically, by recording self-perception, or externally, by recording the perception of an onlooker. Factors which influence beliefs about performance may vary according to educational level and other variables which may become part of the perceptual field and belief structure.

The sample was selected randomly, stratified by educational preparation and included 34 associate, 35 diploma, and 36 baccalaureate (n = 105) full-time staff nurses employed in seven hospitals in a major Southeastern metropolitan area. Each nurse was contacted on the nursing unit where demographic data were collected, a modified version of the Schwirian Six-Dimension Scale of Nursing Performance (6-D Scale) was administered, and the immediate supervisor who had observed the respondent's nursing performance was identified. The supervisor was similarly contacted to collect demographic data and to obtain the supervisor's rating of the staff nurse's performance on the modified 6-D Scale. The 6-D Scale measures the constructs of leadership, critical care, teaching/collaboration, planning/evaluation, interpersonal relationships, and professional development. Demographic data included age, sex, level of preparation, nursing school, years since graduation, other education, years of nursing experience, hospital, time in present position, shift, type of unit, and type of nursing delivery system.

There were no significant differences in self-perception of performance according to educational level. Supervisors rated baccalaureate nurses significantly highest in critical care. There was no significant correlation between the demographic variables and self or supervisor ratings. There were differences in self-rating on critical care and planning/evaluation according to hospital Number of years since graduation and shift were significantly correlated with leadership. Type of unit was significantly correlated with teaching/collaboration. There was a significant correlation between self and supervisor ratings on leadership, critical care, and teaching/collaboration. Factor analysis indicated that the leadership and interpersonal relations subscales of the 6-D Scale

were not construct valid for self or supervisor ratings in this sample.

Conclusions were that associate degree, diploma, and baccalaureate staff nurses had the same self-perceptions of nursing performance. According to supervisor perceptions, baccalaureate nurses performed significantly better than associate degree nurses in critical care. The specific hospital, type of unit, and shift were significant predictors of components of nursing performance. Self and supervisor perceptions of performance were significantly correlated on over half of the rating scale items.

Recommendations were that research on nursing performance in the critical care setting be continued; research on nursing performance in settings other than the hospital be conducted, further identification of organizational variables which influence perceptions of performance be encouraged; and construct validity of the 6-D Scale be studied.

(Note: References not furnished.)

A COMPARATIVE STUDY OF RESPONSES OF FACULTY AND POTENTIAL RN-BSN STUDENTS TO COMPONENTS OF AN ARTICULATION CURRICULUM MODEL

Barbara J. Clancy
University of Kansas

The purposes of this comparative study were threefold: (1) to identify the components of an articulation program in nursing education that would be suitable to the expressed needs of associate degree and diploma nurse graduates; (2) to compare the responses of associate degree nurses with diploma nurse graduates regarding the courses that should be challenged and those that should be required; and (3) to compare the responses of the associate degree nurses and diploma nurses with those responses of faculty regarding which courses should be challenged or required in order to meet the terminal objectives of a baccalaureate nursing program.

A faculty questionnaire was sent to 126 faculty teaching in RN-BSN articulation programs. A potential student questionnaire was sent to 252 licensed registered nurses. The associate degree nurse responses (Group I, N = 54) were compared with the diploma nurses' responses (Group II, N = 72). Each of these group responses were then compared with responses of the faculty (Group III, N = 92). A nonparametric and parametric one-way analysis of variance were done to analyze these data.

There were six null hypotheses (H_0) tested. Null hypothesis I compared responses of diploma nurse graduates and associate degree nurse graduates to curriculum components normally included in these nursing programs. 1-H_0 was accepted in entirety and there were no differences in responses of these groups regarding the need to be able to challenge theory and clinical courses in maternity,

pediatric, medical-surgical and psychiatric nursing. 2-H_0 compared the responses of the associate degree nurse graduates with those of the faculty regarding the curriculum components normally in diploma and associate degree nursing programs. This null hypothesis was rejected for the theory components except psychiatric nursing theory. There were significant differences between Group I and III. 3-H_0 compared responses of Group II (diploma) and III (faculty) regarding the same curriculum components. This null hypothesis was rejected for the theory components except psychiatric nursing theory. There were significant differences between Groups II and III.

Null hypotheses 4, 5, and 6 examined the responses relating to curriculum components not normally included in diploma and associate degree nursing programs such as: a bridge (transition) course; nursing research; community health; and advanced nursing or management. 4-H_0 compared the responses of the diploma and associate degree nurse graduates. The four clinical variables for the bridge course were rejected and there was a significant difference between these two groups. The diploma nurses as a group were more in favor of requiring a clinical component. 5-H_0 compared the responses of Group I (associate degree) and Group III (faculty) regarding the same curriculum components as in 4-H_0. This null hypothesis was rejected for six variables, as there were statistically significant differences between Group I and III. There was no difference between these groups regarding the bridge course clinical variable. The faculty were more in favor of requiring these courses than were the associate degree nurses; however, neither Group I nor III believed clinical experiences in the bridge course were necessary. 6-H_0 compared the responses of diploma nurse graduates with those of

faculty regarding the above stated curriculum components. This null hypothesis was rejected in entirety because there were statistically significant differences between Group II and III in all variables. The diploma nurses were more in favor of requiring a clinical component in the bridge course than were the faculty except in community health. The faculty were more in favor of requiring theory in all areas and clinical in advanced nursing than were diploma nurses.

The faculty members who participated were more favorable toward challenge examinations in the typical nursing components in diploma and ADN programs than were either of these Group I and II. Diploma graduates were more favorable toward clinical requirements than either the ADN graduates or the faculty group. Learning experiences for students should be based on the principles of flexibility and individuality.

SELF-REGULATORY NON-NUTRITIVE SUCKING (SNS): EFFECTS ON AROUSAL AND FEEDING IN RESTLESS NEWBORN INFANTS

Gene C. Anderson, Alyce R. Grant and Dharmapuri Vidyasagar
University of Florida

Crying is common behavior in Western culture hospital nurseries. This experiment was done to show the effects of self-regulatory non-nutritive sucking (SNS) on arousal and feeding in restless newborns. Self-regulatory means sucking is given on cue and to satiety. In addition to initiating the gastrointestinal cycle, sucking may facilitate its completion, thereby improving health and comfort.

Twenty clinically normal infants, 1 to 4 days old, were selected randomly from infants exhibiting refractory restlessness, and were assigned randomly to a treatment or control group. Sex was controlled. A pacifier (commercial bottle nipple) was used to provide the SNS treatment during interfeeding intervals after the 9 a.m. and 1 p.m. feedings. The control group received routine care. The mothers reported feeding behavior. The investigator recorded arousal for the first 15 seconds of each minute during both interfeeding intervals.

Mean sucking time for each interfeeding interval was 61.2 minutes. The groups were similar in cc's of formula ingested, and in amount of drooling, regurgitating, hiccoughing, passing of flatus, straining at stool, voiding, and stooling. Treated infants burped more ($p < .001$). Treated infants engaged in more regular sleep ($p < .005$), alert inactivity ($p < .005$), and object sucking ($p < .001$); and less irregular sleep ($p < .005$), waking activity ($p < .05$), intrinsic mouthing ($p < .001$), rooting ($p < .001$), whimpering ($p < .001$), crying ($p < .005$), and vigorous

crying ($p < .005$). The SNS (snooze) treatment, which resulted in prolonged settling of these very young newborns, may help prevent or ameliorate infant colic, which is one precipitating cause of child abuse.

SELF-REPORTED COPING HISTORIES OF ADULT PSYCHIATRIC AND NON-PSYCHIATRIC SUBJECTS AND CONTROLS

Mary Swanson Crockett
The University of Texas at Austin

The purpose was to describe the self-reported development of one's coping beliefs and practices, from earliest memories to the present, among contemporary American psychiatric subjects and controls. Descriptive data were used as a base for suggesting hypotheses for further research toward more effective psychiatric mental health nursing and self-care for this kind of client population.

Eighty psychiatric and 80 non-psychiatric subjects participated with eight to 10 hours each of semi-structured interviews using the M.M.P.I, Rotter I.E. Scales with three perceived Social Distribution of Self charts for each subject. The findings were analyzed by chi square showing eight distinct, logically coherent "belief systems," each incorporating self-image, self-reported development as a social relator, explanation of one's illness and management of it. Clusters of subjects within each "belief system" coincided closely but not exactly with diagnostic categories. Strongest discriminators between clusters were: subjects' adult beliefs about their own peer relationships in grades K-6; experiences and attitudes about work; degree to which subject believed body chemistry caused his/her illness; type and sequence of self-care practices developed for coping with one's psychiatric illness; perception of one's usual mode of relating to specified types of large and small groups; views of whether one's usual energy supply was excessive, normal or inadequate. Nine hypotheses for further study based on these data were stated with rationale for each.

PREDICTORS OF SUCCESS IN NURSING SCHOOL AND ON STATE BOARD EXAMINATIONS IN A PREDOMINANTLY BLACK BACCALAUREATE NURSING PROGRAM

Mary Swope Dell
Tuskegee Institute
and Gerald Halpin
Auburn University

For many years researchers have attempted to accurately predict which student nurses will successfully achieve their goals of becoming registered nurses and which will not. A number of these researchers have used cognitive predictor measures, such as Scholastic Aptitude Test (SAT) scores, National League for Nursing (NLN) test scores, and grade-point averages (GPA), yet have arrived at somewhat different results. Litherland (1966), in looking at collegiate and diploma graduates, found a positive relationship between high school, GPA, and State Board Examination (SBE) results (but correlations of only .23 to .63 with a median of .36). Perez (1977) used SAT scores successfully in predicting SBE results, especially the SAT-verbal, but stated that the freshman year GPA was the best predictor. Muhlenkamp (1957), in predicting SBE scores, found only one significant correlation using SAT scores (between SAT-verbal and the Psychiatric Nursing SBE); Kovacs (1970), in studying three baccalaureate schools, concluded that the SAT scores were the best predictors for SBE results.

In examining NLN test scores, Katzell (1970) studied graduates of two-year programs, diploma programs, and collegiate programs and found a significant degree of relationship between performance on these tests and SBE scores. Brandt, Hastie and Schumann (1966) concluded that nursing theory grades and the NLN Medical-Surgical Achievement Test scores were the best predictors of SBE

results. Muhlenkamp (1957) found the best predictors to be the NLN Natural Science Test and the seventh semester GPA with multiple correlations ranging from .66 to .83.

In recent years, studies are more numerous in attempting prediction of nursing GPA than in trying to predict SBE results. In fact, there are only seven studies in the latter category during the last 10 years in nursing literature (Perez, 1977). Also, studies involving non-baccalaureate nursing education have outnumbered those concerning baccalaureate programs. Studies involving predominantly black schools are rare. In a study of three ethnic groups, predominantly Caucasian, Haney, Michael and Martois (1976) found that predictors for Caucasians were not useful for the black group and vice versa. What predictors, then, are best for predominantly black colleges? Or are those predictors really different?

The study herein described was undertaken to determine which predictors were best for predicting success in a predominantly black baccalaureate nursing program and success on SBE, and if these predictors were the same for both success in the program and success on SBE. The predictor variables used were SAT-verbal scores, SAT-quantitative scores, high school GPA, NLN Pre-Nursing Examination and the collegiate senior year (cumulative) GPA. The objectives were twofold. If the first four variables listed above significantly differentiate between those subjects who graduate from a baccalaureate school of nursing and those who drop out, transfer, or fail, then the predictor variables making the larger contribution to the prediction will be identified. Secondly, if all five of the listed variables significantly differentiate between those subjects who pass the SBE and those who fail on

the first attempt, then the predictor variables making the larger contribution to the prediction will be identified.

Subjects for this study were 456 black students admitted to a private, predominantly black, baccalaureate school of nursing during the five-year period from 1970 through 1974. Scores and grade-point averages were collected from records of these students within the school of nursing in an anonymous fashion so as to protect confidentiality. There were 181 students who successfully completed their course of study and took the State Board Examination. These were used in the second analysis.

Two separate discriminant analyses were computed. For the first discriminant analysis, four variables were used to differentiate between those who graduated and those who failed to graduate from this school. The variables used were SAT-verbal, SAT-quantitative, high school GPA and the NLN Pre-Nursing Examination.

The second discriminant analysis utilized the same variables plus the college GPA to differentiate between those who passed the SBE to become registered and those who failed to do so on the first attempt. When significant discriminations were obtained, a one-way analysis of variance was computed for each significant variable.

In the first analysis, the four variables of SAT-verbal, SAT-quantitative, high school GPA and the NLN Pre-Nursing Examination significantly differentiated between the graduates and non-graduates with a chi square (4) of 51.48, $p < .001$.

There was a significant difference between subjects graduating and failing to graduate on

each dependent measure. The high school GPA and the NLN Pre-Nursing Examination possessed the higher discriminating weights when investigating the variables from a multivariate perspective.

In the second analysis, the four variables of the first analysis plus the college GPA significantly differentiated between those who passed the SAT and those who did not with a chi square (5) of 23.76, $p < .001$.

There was significant difference between subjects passing the SBE and those failing to do so on each dependent measure. From a multivariate perspective, the college GPA possessed the highest discriminating weight followed by the SAT-verbal and then the NLN Pre-Nursing Examination.

Since every predictor variable significantly differentiated on both criterion measures, all of these variables are seen as important in predicting success for black students in baccalaureate nursing education. Indications are, however, that perhaps more attention needs to be given to NLN Pre-Nursing Examination scores than is evidenced in the literature, at least in predominantly black baccalaureate schools. From the study reported here, predictors for black nursing graduates seem to be the same as for other ethnic groups. Indications are that using SAT scores and high school GPA as admissions criteria is good practice and that where NLN Pre-Nursing Examination scores are not used, their use should be instituted.

A very interesting finding was the differences between looking at graduates versus non-graduates and looking at SBE passers and failers. High school GPA and SAT-quantitative were less significant as predictors when looking at SBE

results than at graduation-nongraduation. The NLN Pre-Nursing Examination is the common predictor variable with high discriminant weight in both groups.

Further studies to involve other predominantly black schools of nursing should be carried out to establish more definitive conclusions. Other variables could be used, such as grades in science courses and in nursing theory, other NLN test scores, and the American College Testing (ACT) program examination.

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DISCONFIRMATION: A DYSFUNCTIONAL FORM OF COMMUNICATION

Jan Heineken
San Diego State University

Pyschiatric-mental health nurses are committed to addressing and altering maladaptive interpersonal communication processes as evidenced in psychiatric clients. This commitment extends to a continuing effort to search for relevant treatment approaches and methods of understanding client behavior. The current study brings to the psychiatric nursing practice setting a new framework from which to understand and address forms of dysfunctional communication.

The utilization of disconfirming messages is one aspect of dysfunctional interpersonal communication believed to contribute to communication breakdown in emotionally ill individuals (Laing, 1961; Ruesch, 1961; Watzlawick, Beavin and Jackson, 1967; Sieburg, 1969). Although disconfirming messages have been viewed as contributing to psychopathology, little empirical evidence exists which links these messages to verbal and nonverbal behaviors in psychiatric clients.

In order to further explore this proposed relationship, a research study was designed and implemented in psychiatric treatment settings (in-patient, outpatient, and day hospital facilities). Explicit categories of confirming and disconfirming behaviors were identified and groups of psychiatric clients were scored, documenting the frequency with which these individuals used these communication responses. Data were compared with a control group for statistical significance. Specific treatment approaches can be designed based on the results of this study.

As indicated in the research literature, and for the purposes of this study, the term "confirmation" referred to any interpersonal communication response (verbal or nonverbal) emitted from one person toward a receiving individual which served to acknowledge, accept, and endorse the recipient. "Disconfirmation" connoted the opposite and made the receiver feel negated, discounted, or ignored.

An earlier investigation by Sundell (1972) disclosed the presence of a reciprocal relationship relative to the confirmation/disconfirmation dimension. What occurred was that when one individual disconfirmed another, he/she received a disconfirmation response in return. Application of this finding helps explain how certain maladaptive communication processes in psychiatric clients create a counterproductive sequence. When clients set up response repertories which are disconfirming, they receive the same type of reciprocal response. These dysfunctional communication patterns can further alienate clients from others and alter their self-esteem.

In the current study, verbal and nonverbal communication behaviors of psychiatric groups were directly observed and coded using a modified form of the Sieburg Interpersonal Responsiveness Category System (1969). The modified instrument contained six categories of disconfirmation and one category of confirmation. The scoring procedure involved coding each individual's response to the previous speaker's statement, according to the category of the confirmation/disconfirmation response into which it fell. The results from the psychiatric groups were compared with a control group.

The total number of scored interactions analyzed was 515. Chi square was employed and demonstrated that: (1) three out of four groups used significantly higher disconfirming rates than the control group ($p < .01$), and that (2) these psychiatric clients disconfirmed more than twice as much as the control group. The group not reaching statistical significance disconfirmed 17 percent of the time, in comparison with the control groups which disconfirmed 10 percent of the time.

For clients who consistently use disconfirming behaviors, the clinician should address these behaviors to facilitate the learning of more productive communication styles. Specific therapeutic strategies can assist these clients to: (1) identify the manner in which they disconfirm, (2) recognize the reciprocal nature of the interpersonal response, (3) learn how to interrupt the sequence through use of more effective verbal and nonverbal communication techniques,and (4) move toward a predominantly confirming communication style.

Therapeutic strategies will vary depending upon the severity of client psychopathology, the motivation of the client, and the resources available to the clinician. Small group discussions can be educationally grounded in a teaching-learning format. Functions the nurse can perform include: (1) sharing knowledge about communication styles, (2) initiating and facilitating discussions about confirmation/disconfirmation behaviors, (3) instituting role-playing techniques so that group members can practice new communicative behaviors, and (4) reinforcing these new learned behaviors by encouraging group members to share their individual cognitive and affective reactions to confirming and disconfirming responses. Ultimately this therapeutic focus will broaden communication repertories and may enhance the quality of interpersonal relationships of these clients.

(Note: References not furnished.)

AUTOMATION AND SOCIAL ALIGNMENT IN HCSPITAL NURSING UNITS

Beverly Henry
University of Alabama in Birmingham

In the last two decades remarkable advances have occurred in medical technology. Little is known, however, about the consequent social technologies that accompany these "advances." Problems of high rates of turnover and dissatisfaction prompted this investigation. It was an attempt to respond to the question: What are the outcomes of higher and lower levels of automation in hospitals in terms of nursing administrative behaviors among nurses caring for patients?

The central thesis of the study was that nurses' administrative behaviors in high and low automaticity nursing units can take on a number of patterns in three key processes--agenda setting, task accomplishing, and network building--and that behavior in these processes is one significant outcome for differentiating nursing units with varying levels of automaticity for purposes of improved nursing administrative practice.

To respond to the question, the context of nursing practice and the nurses' behaviors in three processes in general and acute care nursing units were described analyzed, and compared.

The data for the comparison were collected by individual interviews and questionnaires administered to 127 registered nurses employed as general staff nurses in two types of nursing units in four classes of hospitals.

Previous research suggests that alignment between individuals, organizational structure, technology, and automaticity is related to unit stability and worker effectiveness. Judging from the instability of nursing staff, reports in the literature of nurses' dissatisfaction with hospital environments, and concerns from the public at large with increased costs and less than optimal care in hospitals, it seemed safe to assume systems and

subsystems of nursing units may be misaligned. This assumption is supported by the study findings.

The most important findings of the study were that nurses in the two types of nursing units have differing agendas, networks, and administrative behaviors. Macro exploration of the context of nursing administration action, behaviors in the three processes, alignments among the contextual variables and the nurses' coaligning behaviors bring to light differing patterns of behavior in two settings characterized by higher and lower levels of automaticity. Nurses labeled Personality/Individualists emerged most often in high automaticity critical care units. Highly trained, assertive nurses who prefer to accomplish tasks alone, on a short-run basis, and in small closely knit networks comprised primarily of physicians, were found most typically in critical care units. Care Coordinator type nurses emerged most often in low automaticity units. These nurses characteristically engaged in longer range planning, network building with nursing administration, and entreprenurial behaviors to accomplish tasks.

States of coalignment among the contextual variables did not exist in either type of nursing unit. That is, misalignments emerged among the variables in both units. The extent of misalignment appears greater for critical care units than for general units. The magnitude and kind of misalignments appear to be related primarily to nurses' educational preparation and orientation, nurses' minimal managerial skills, and formal nursing unit structure.

The findings of the study suggest that application of the coalignment model is appropriate for comparative investigations of nursing outcomes. Integration of process, structure, and individual behavior contributes to understanding the nature of technologically complex and turbulent environments, how

nurses administer care in them, and how they are best administered.

A MEASURE OF CHANGE IN REGISTERED NURSES WHO PARTICIPATED IN AN ASSERTIVENESS TRAINING COURSE

Bonnie Hensley
University of North Carolina, Chapel Hill

This study was devised to evaluate a continuing education short course, Leadership Development: Assertive Training for Nurses, at the School of Nursing, University of North Carolina at Chapel Hill. The specific questions explored were: Will participation in the assertive training course result in an increase in assertiveness as measured by the Adult Self Expression Scale, and will this change be sustained for three months?

The learners studied consisted of 116 registered nurses (four males, 112 females) who elected to participate in one of eight sections of the assertive training course between April 1977 and May 1979. Participants in the course received 18 hours of AT consisting of precourse reading, video and live modeling, behavior rehearsal, coaching and reinforcement with video, peer and trainer feedback, homework assignments, peer group support, and didactic discussions.

Each participant was asked to complete the Adult Self Expression Scale prior to the beginning of the course, and at the end of the course, and again three months later.

A comparison group of 31 registered nurses (three males, 28 females) none of whom participated in the course, was also tested for changes

in assertiveness. The Adult Self Expression Scale was administered to the comparison group initially and again three months later with no intervening assertive training.

The Adult Self Expression Scale (Gay, Hollandsworth, Galassi) is a 48-item self-report inventory which taps the frequency of engaging in assertive benavior with a variety of persons in particular situations. Scores on the Adult Self Expression Scale may range from 0 to 192. A score above 135 may indicate assertive behavior. For the experimental group the mean score on the pre-test was 110.6. The mean score on the post-test was 134.3, a significant increase. The three-month post-test mean score was 142.5, again a significant increase over the initial score as well as a significant increase over the end of the course score. The comparison group had a slightly higher score on the initial assessment but showed no change over time. The comparison group mean score was 117.6 initially, and three months later it was 115.9. Mean change score pre-test to three-month post-test for the experimental group was significantly greater than that for the comparison group, $t(145) = 8.38$, $p < .001$.

These data show that an increase in assertiveness occurred in those nurses who completed the course and this change was sustained over a period of time.

Traditionally, it has been difficult to evaluate short courses in continuing education because adequate measurement instruments were lacking. This study indicates that evaluation of short courses can be accomplished if desired changes are specific and measurable. The study points to a need for more work in clarification of change sought and development of measurement tools. (Note: References not furnished.)

COPING STRATEGIES OF NEONATAL INTENSIVE CARE UNIT NURSES

Sharol F. Jacobson
The University of Texas Health Science Center
San Antonio

The purposes of this study were to (1) determine what coping strategies neonatal intensive care unit (NICU) nurses reported using in given stressful situations, (2) identify major categories of coping through factor analysis, and (3) examine the influence of relative stressfulness of situations and of selected demographic variables on reported coping strategies. Such information is relevant to nursing education and to the recruitment and retention of hospital nursing staff.

Subjects were a sample of 191 registered nurses from 19 NICUs in six states (Georgia, Oklahoma, Arizona, California, Michigan, and Minnesota). Most had over two years of NICU experience, were less than 29 years old, worked full time, and were married but did not have children. Baccalaureate, diploma, and associate degree graduates were quite evenly represented.

Between June 1980 and April 1981, these nurses completed the Nurses' Coping Scale (NCS), a paper-and-pencil tool developed by the investigator in earlier research (Jacobson, 1977, 1978, 1980). This tool consisted of (a) 10 stressful incidents, five of which previous research had shown to be highly stressful and five much less so; (b) 13 coping strategies from the literature and observations of NICUs, and (c) a guide sheet to coping strategies which gave examples of behaviors in each strategy as an aid to validity. Nurses rated how likely they would be to use each strategy in each situation and completed a brief demographic sheet. The anonymous tool

required 30 minutes to complete.

Inspection of the means and standard deviations of the strategy ratings revealed that all strategies were rated highly in more than one situation and merited inclusion in a coping repertoire. A principal components factor analysis with Varimax rotation (FA 1, SPSS) was performed on the strategy ratings. Four factors with eigenvalues >1.0 were identified, considering variables with loadings $\geq .40$ as definers of the factor. These factors, in order of decreasing salience in the rotated factor matrix, were named Cognitive Processing and Distancing, Revision and Rehearsal, Social Self Expression, and Denial. Together they accounted for 51.3 percent of the total variance. Cronbach alpha coefficients for the four factors were .69, .46, .13, and .02 respectively. A mixed model analysis of variance (BMDP-79) found the effect of stress level of situations and factor scores to be significant for three of the four factors. Factor I strategies were used more often in highly stressful situations than in less stressful events ($p = .002$). Factor III and IV strategies were used more frequently in less stressful situations ($p = .01, .003$).

Multivariate analysis of variance (SAS, 1979) on the demographic variables and the strategy ratings in high and low stress situations found that the use of the strategies "Rework the situation in your imagination" and "Search for philosophical and spiritual meanings" decreased with age in both high- and low-stress situations. Younger nurses were significantly more likely than older nurses to "Seek more information about the situation" ($p = .01$). Unmarried nurses and those without children used "Search for philosophical and spiritual meanings" more often than married nurses and those with children

(p = .001 and .04). Part-time nurses were significantly more likely to use "Don't worry about it" than full-time nurses in highly stressful situations (p = .04).

The obtained factor structure of nurses' coping strategies was consistent with several major categorizations of coping and with current recommendations for stress management. The relative stressfulness of events was a major determinant of coping choices and should be assessed when providing information about coping. Strategies indicating a desire to escape were prominent in two factors and support the creation of sanctioned time-outs for nurses. The Social Self Expression factor supports nursing education's emphasis on communication and change agentry. Nurses appear ready for education in coping. The coping patterns of nurses over 40 and the influence of marriage and maternity on NICU nurses' coping deserve further investigation.

The next phase in the validation of this tool will be to explore the relationship of factor scores on the NCS to various assessments of job performance and job satisfaction.

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A TOOL FOR THE QUANTITATIVE EXTERNAL COMPARISON OF CONCEPTUAL MODELS OF NURSING

Sharol F. Jacobson
The University of Texas Health Science Center San Antonio

To aid the development of nursing theory, this study tested a method of quantitative comparison of theories. A semantic differential of 35 scales considered relevant to the evaluation of theories (e.g., heuristic-mundane, testable-untestable) was developed from the literature (Hardy, Ellis, McKay) and applied to the theories of King, Orem, Rogers, Roy, and Wiedenbach. The piloted, revised tool was completed by 78 master's level nursing students (85 percent of those eligible) over three semesters upon completion of the required course, Theoretical Foundations of Nursing.

The overall test-retest reliability of the tool over one month was .74 ($p = .05$, $N = 10$) with $\underline{r}s$ for individual theorists ranging from .49 (Wiedenbach) to .96 (Roy). Students' ratings of theorists were independent of their clinical majors, the semester in which they took the course, and the order of the scales (three random orders of scales were included to control for order effects). Ratings for Orem, Rogers, and Roy were unrelated to students' estimates of confidence in their ratings, but ratings for King and Wiedenbach differed

significantly between those who felt most and least confident about their knowledge of those theorists.

Profiles of each theorist's ratings on the unfactored scales revealed a similar pattern for all theorists (reflecting the common subject matter), but strikingly different means (the individual approaches). Rogers and Roy received the most extreme ratings, consistent with an intuitive analysis of their views, their high test-retest reliabilities, and the confidence expressed by students in their ratings of these theorists.

A principal components factor analysis with varimax rotations and 50 iterations was run on the ratings for each theorist. The factor structures were as follows: King and Orem--Sophistication and Dynamism, Clarity and Usefulness, Focus; Rogers--Clarity and Usefulness, Sophistication and Dynamism, Focus; Roy--Sophistication and Dynamism, Usefulness, Focus; and for Wiedenbach--Sophistication-Dynamism-Scope, Clarity and Usefulness, Scientific Rigor. Rogers' Clarity and Usefulness and Wiedenbach's Scientific Rigor were meant in a negative sense--students saw Rogers as unclear and Wiedenback as lacking in scientific rigor. No theorist's structure loaded on all 35 scales, but no scale failed to load on some factor for each theorist. Continuing development of the tool will emphasize identification of the most functional scales and then seek validation with a larger sample before announcing a final factor structure.

Orem, Roy, and Rogers emerged as the theorists with the strongest, clearest factor structures and as the combination with the greatest reliable diversity. The finding that ratings were independent of the students' clinical majors eliminated the perennial question of the suitability of

particular clinical areas. The semantic differential appears worthy of further development as an empirical means of comparing theories.

(Note: References not furnished.)

STAFF NURSE ATTITUDES TOWARD CHRONIC PAIN PATIENTS

Paula Myers Jamison
West Texas State University

The purpose of this exploratory study was to determine some existing attitudes which staff nurses hold toward the patient with chronic pain, and to determine if there was an association between these attitudes and the interventions the staff nurses would choose.

Shealy (1976) contends that because of ignorance and inappropriate attitudes toward chronic pain by both the patient and the health professionals who care for him, the chronic pain patient tends to lead a life of pain-related disability, accompanied by countless hospitalizations, treatments, and surgeries.

Valadez and Anderson (1972) contend that the nurse's attitudes influence the nurses' inference of the patient's needs and directly affect the quality of the care he/she uses to meet them.

The problem was: What is the relationship between the attitudes of staff nurses toward the patient with chronic pain and their nursing interventions with these patients?

The objectives of this exploratory study were twofold. The first objective was to answer the six

study questions presented below. The second objective was to empirically test the null hypothesis that there would be no difference between staff nurses who indicate a more negative attitude toward the chronic pain patient and staff nurses who indicate a more positive attitude in the interventions they indicate they would use in two open-ended questions.

Study questions were:

1. Do staff nurses view the chronic pain patient as having "real pain"?

2. Do staff nurses view the chronic pain patient's needs to be physiologically or psychologically based?

3. Do staff nurses differentiate between acute and chronic pain?

4. How does the staff nurse rate the chronic pain patient's pain?

5. How does the nurse view him/herself in relation to the chronic pain patient?

6. What does the staff nurse indicate is the most effective method of pain management for the chronic pain patient?

A random sample of 500 nurses (.55 percent of the total population) was obtained from a card file of 91,000 currently registered nurses in the state of Ohio. Only nurses who were employed in a hospital and working on a medical/surgical unit were selected for this study.

The study was conducted using a mailed, 20-item questionnaire developed by the investigator. Each

questionnaire was accompanied by an explanatory cover letter and a stamped, addressed envelope for returns. No reward was offered to the subjects for participation.

Of the sample, 191 (.22 percent of the total population) chose to participate in this study. Ninety-nine percent of the respondents were female, the majority worked on general medical/surgical units, and most had graduated from diploma schools of nursing.

Items on the questionnaire referred to two given patient situations. Each situation was followed by a number of attitudinal statements which were marked by the respondent and scored by the investigator using a five-point Likert scale. Each situation also contained an open-ended question which asked the respondent to indicate an intervention he/she would choose for the patient in that situation. A quantitative coding procedure was developed by the investigator using findings from prior related studies. Respondents indicating more than one intervention were assigned the code score reflecting the most effective intervention he/she indicated.

For the purpose of data analysis, descriptive statistics were used to present the existing staff nurse attitudes determined by the questionnaire. A correlation analysis was performed to determine if there was an association between the Likert scale attitudinal score and the assigned intervention score.

The staff nurses indicated neither a strong belief nor disbelief in the chronic pain patient's pain, though they did judge it to be less severe than the patient said it was. The respondents indicated that they did differentiate between the characteristics of acute and chronic pain and also indicated a preference for dealing with acute pain because

it is "real" and has "priority." The staff nurses indicated a psychological basis for chronic pain and viewed themselves as competent to care for the chronic pain patient. Talking with the patient, relaxation techniques, and medication were viewed by the respondents to be effective strategies in relieving the chronic pain patient's pain. Comfort measures were viewed as ineffective for the relief of chronic pain.

The null hypothesis was empirically tested using the above mentioned procedure and was unexpectedly accepted due to an extremely low degree of correlation (Pearson r=0.069) between the attitudinal and intervention scores.

The major conclusions drawn from this study included:

1. Staff nurses consider patients as individuals rather than categorizing them according to diagnosis.

2. Staff nurses possessing the ability to recognize one intervention as more effective than another could choose to implement more effective interventions if the knowledge base concerning the effective care of the chronic pain patient was provided.

3. Staff nurses who can intellectually differentiate between the effectiveness of interventions could be taught to differentiate between acute and chronic pain both in their assessments and in their interventions.

4. Adequate staffing, decreased task-orientation, and increased autonomy for staff nurses would result in increased implementation of effective interventions.

5. Staff nurses lack motivation in their present work environments to implement effective interventions.

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THE HISTORICAL DEVELOPMENT OF BACCALAUREATE NURSING EDUCATION IN THE AMERICAN UNIVERSITY: 1899-1935

Sydney D. Krampitz
University of Kansas

Professional training generally evolved from an apprenticeship model into a system of proprietary schools and, by the late nineteenth century, into integral schools or departments in the developing universities. Nursing education followed a similar pattern of development, being established initially in hospital training schools and eventually as baccalaureate programs. The first collegiate nursing courses were developed at Teachers' College, Columbia University, in 1899, for graduate nurses preparing for teaching and administrative positions in hospital training schools. Significant changes were occurring in colleges and universities during this period. One of these changes was the increased emphasis being placed on professional preparation. As new technology demanded refinement of professional skills, the university, with its laboratories and

library, attracted ever-increasing numbers of students. Changes in nursing practice also demanded increased knowledge and skills which educators were unable to provide in traditional hospital training programs. One major change in nursing and medical practice was the development of the field of public health or preventive medicine. Nursing leaders, recognizing the educational opportunities which university affiliation could provide, initially sought broader educational preparation for nursing faculty and superintendents of training schools and later developed baccalaureate nursing programs for students preparing to enter nursing practice.

This study of the establishment or reorganization of seven undergraduate nursing programs revealed that, in the development of nursing education programs in colleges and universities during this period, nursing educators were confronted with a myriad of problems. These nursing leaders continually struggled to gain both adequate financial support and teaching environment in which nursing students were free of the repetitive and routine tasks which dominated hospital training programs for nurses. In their attempt to reform nursing education, these nursing leaders received support from leaders in the public health movement, prominent medical educators, philanthropic foundations, and private benefactors. This support often made the critical difference between success and failure in developing and sustaining collegiate nursing education. The establishment of the Association of Collegiate Schools of Nursing--similar to the earlier establishment of organizations of professional schools of law, medicine, and education--fostered the development of a professional subculture and gave impetus to the expansion of baccalaureate nursing education in American colleges and universities.

This study of the historical development of undergraduate nursing education in American colleges and universities has implications for nursing educators today as they continue to seek reform and the elevation of standards in nursing education and nursing practice. If baccalaureate nursing education is to gain increasing acceptance into the institutions of higher education in the future, nursing leaders would do well to recognize that progress was made only when the following basic conditions were satisfied in each of the institutions in this study: financial resources available to support the new program; support of administrators, trustees, laypersons, and professionals in the development or reorganization of a program in nursing; and institutional openness to innovative change.

AN EVALUATIVE FIELD STUDY OF THE QUALITY, ACCESSIBILITY AND UTILIZATION PATTERNS OF HEALTH CARE IN RURAL NURSE PRACTITIONER PRIMARY HEALTH CARE CENTERS

Frances Lange
University of Alabama, Birmingham

Primary health care is still at the "crossroads," and the problems faced by the nurse practitioners functioning interdependently in isolated rural primary health care centers need to be periodically re-evaluated. The researcher has spent the past five years as a consultant to many small rural communities in Alabama who were interested in establishing nurse practitioner primary health care clinics. With the establishment of these clinics, health services have been extended to rural areas that have been medically deprived for many years. Alabama presently has 50 to 60 primary health care

centers scattered throughout the state. In 1980 about 80,000 people used the clinics for approximately 250,000 visits.

Thus, a real need is being met by the nurse practitioner, physician, and other health team members working in these centers. Many of the programs have become self-sufficient and have effectively demonstrated that quality primary care services can be organized and run as a humane but efficient business. Yet, we are still far from perfect. There are changes coming about which will affect many of our rural clinics, especially those which function with a nurse practitioner and a remote physician preceptor. We need to consider these changes, take heed, and prepare for the future.

This study combines evaluative field research of 40 rural primary health care centers in Alabama with the projection of a prototype of a comprehensive system for the delivery of both health and illness care that will meet the needs of rural communities. The proposed model functions on the premise that the health care delivery system, as it exists in the United States today, is, in reality, a dual system--a system in which health and illness must be viewed as separate but interactive concepts that will function to maximum potential only with a totally integrated, well coordinated, interdisciplinary health team approach.

Part I of the study focused on a summary evaluation of data collected as a result of on-site observational and participant-observer visits to federally-funded rural primary health care centers. From this survey, two basic clinic models were identified. The first model was basically that of a physician's office, usually with a registered

nurse, licensed practical nurse, or physician's assistant as a helper but no nurse practitioner or clinical specialist. The second model identified was the nurse practitioner clinic with a remote or part-time physician preceptor.

Data collection was concentrated on four major areas. These were:

1. the quality of health care given,
2. the accessibility of the clinic to the community,
3. the patterns of clinic utilization, and,
4. the overall economic feasibility of each clinic.

Thus, the researcher's intention was to look at the specifics of a particular clinic's success or failure in such variables as services offered, encounter rates, and the utilization patterns of nurse practitioners and physicians.

Part II of the study will view the long-range survival of rural primary health care centers in a collaborative, joint practice between nurse practitioner and physician. The researcher envisions a rural practice where the roles of nurse practitioner and physician are clearly delineated, independent, and yet totally complement each other. One in which no role confusion exists and there is no duplication of services. The proposed model developed as a result of this study will provide the rural community with an organized and rational approach to meeting both health and illness needs.

RELATIONS OF DEMOGRAPHIC CHARACTERISTICS, WORK ENVIRONMENT AND JOB SEARCH ACTIVITIES TO JOB SATISFACTION OF NURSING EDUCATORS IN THE SOUTH

Elizabeth R. Lenz
and Carolyn F. Waltz
University of Maryland, Baltimore

Attraction, selection, and retention of well qualified nursing educators are critical concerns for higher education in nursing; however, little is known about factors in the working situation which serve to promote job satisfaction. This correlational study examined the job satisfaction of nursing educators in baccalaureate and higher degree programs in the South. Two major questions were addressed: (1) How satisfied are nursing educators with characteristics of their present positions? (2) To what extent are the demographic characteristics of nursing educators, the characteristics of their work environments, and the methods which they employ in seeking jobs related to their level of job satisfaction?

Although several studies have examined job satisfaction among nurses, relatively few have focused on nurses employed in educational settings. Job satisfaction of nursing educators has been found to be a multivariate phenomenon--satisfaction varies according to the aspect of the job being considered (Grandjean, et al, 1976; Marriner and Craigie, 1977). Level of satisfaction was found in the above research to be related to the demographic and employment characteristics of the educator; his/her level of scholarly productivity; and the nature of the work environment, most importantly the perceived organizational climate of the school of nursing. A desire to reexamine these patterns in light of current changes in the nature of nursing educational positions (e.g., increasing emphasis on research, increasingly stringent appointment and promotion criteria, austerity in

higher education) motivated the present research.

Previous investigation of the job search of professionals (Granovetter, 1974; Brown, 1967) has suggested that in attempting to explain job satisfaction, it is important to consider not only demographic characteristics and the work environment, but also the process which the individual employs in seeking and selecting a position. These studies, derived from micro-economic models, have indicated that job search varies in extent and in the methods employed, with different methods yielding different kinds and amounts of information. Thus, certain job search activities are predicted to result in more favorable outcomes than others. On this basis the present study examined the extent to which variation in job search was related to satisfaction in the job selected.

Job satisfaction was operationalized as an individual's self-designation (on a five-point Likert-type scale) of the level of satisfaction with each of 59 job characteristics and with the job in general. Demographic variables included characteristics of the individual (e.g., age, marital status, family status), his/her current employment status (e.g., rank, salary, type of position), and level of scholarly productivity.

Variables describing the work situation included characteristics of the institution (size, source of support, etc.) and the type of perceived organizational climate of the school and department/unit in which the individual worked. Variables describing the job search process included the extent of search, the number of other positions considered simultaneously and method of search employed.

The data collection instrument was a questionnaire adapted from that used by Marriner and Craigie (1977). Psychometric properties were satisfactory.

Questionnaires were mailed to all faculty in the 53 schools of nursing in the Southern region whose deans/directors had agreed to participate. A total of 790 usable questionnaires were returned. Data analysis involved computation of descriptive statistics, bivariate measures of association and canonical correlation. The canonical correlation analysis was computed using only the 607 questionnaires with complete data.

The major findings are listed below:

1. Faculty reported highest levels of satisfaction with their level of responsibility, geographic location of the school, length of annual appointment, congeniality of colleagues and variety in work. The greatest dissatisfaction was found with policies regulating salary, financial support and facilities for research, and promotion policies.

2. Overall satisfaction with the job was correlated with satisfaction with a large number of job characteristics, both extrinsic and intrinsic in nature.

3. An open organizational climate was associated with high levels of job satisfaction.

4. Educators' personal characteristics were generally not related to their overall job satisfaction; however, differences in career stage and scholarly productivity were related to satisfaction with selected aspects of the job.

5. Only selected apsects of the job search process were related to job satisfaction, but not in the direction expected. The

more jobs considered simultaneously and the greater the extent of search to find out about the existence of positions, the less likely was the educator to be satisfied with the current position. The extent of follow-up search activity and the method employed were not related to job satisfaction.

6. Current job satisfaction was related to search for another position. The lower the satisfaction, the more likely the educator to be seeking another position and the more extensive the search being carried out.

Job satisfaction is a complex multidimensional phenomenon. The current analysis indicated that subjective experiences and perceptions interact with the characteristics of a particular work environment to influence job satisfaction. The findings suggest that traditional models for describing the job satisfaction of professionals as derived primarily from intrinsic rewards may no longer be appropriate in nursing education. The importance of an open organizational climate for faculty job satisfaction was underscored. The rising salience of financial considerations and inadequate research support as sources of dissatisfaction reflect current economic and professional trends and have implications for faculty retention. An implication of this research is that in order to promote faculty job satisfaction and retention in a time of budgetary constraints, it is necessary not only to increase flexibility and creativity in work assignments and benefits, gearing them more to individual needs and preferences, but also to facilitate an environment which is conducive to participation and cooperation.

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INFLUENCE OF EARLY MATERNAL-INFANT CONTACT ON ATTACHMENT BEHAVIORS OF TEENAGE MOTHERS

Johnie N. Mozingo
University of Tennessee, Knoxville

Young women who become mothers while still in their teens may be almost totally unprepared for the responsibilities of being a parent. Maladaptive parenting and failure to assume the maternal role are frequent problems among teenage mothers.

The purposes of this study were to determine if young, high-risk mothers who received extended early contact with their infants would demonstrate stronger attachment behaviors and more positive perception of their neonates than a control group, and to determine if response to early contact would be mediated by maternal age.

Fifty-four primiparous teenagers with uncomplicated vaginal deliveries of normal term infants were randomly assigned to either an experimental or control group. Mothers in the experimental group received 30 minutes contact with their neonates in the first hour of life, while control mothers had 5 to 10 minutes. The dependent variable was maternal attachment as measured by Broussard's Neonatal Perception Inventories (NPI) and the Funke-Irby Maternal Infant Interactional Assessment (FIMI) for maladaptive and adaptive maternal behaviors. Data collection occurred on day 2 or day 3 and at one month. Observers were unaware of group assignments.

Two-way analysis of variance ($p < .05$) indicated that contact and interaction of contact with age were significant for the NPI at time 1, and age was significant for the 1-month FIMI data. Chi-square analysis of linked NPI data which categorized mothers by consistency of response revealed between-group difference ($p = .0542$). NPI and FIMI scores did not correlate well as isolated sets, but were significant ($p < .005$) when linked NPI categories were related to direction of change from FIMI 1 to FIMI II.

Results indicated that amount of early contact was an important variable in the development of maternal attachment for this sample. Adaptive maternal behaviors clearly were influenced by age, but the relationship of contact to age was more of an additive effect rather than the interaction effect hypothesized.

THE EFFECTS OF HYGIENE MEASURES UPON THE CEREBROVASCULAR FUNCTION IN PATIENTS WITH SEVERE CLOSED HEAD INJURIES

Amy Smith Peard
and L. Claire Parsons
University of Virginia

Medical intervention used in controlling the secondary effects of severe closed head injury, such as cerebral edema, hypertension, hypoxia and ischemia, are well documented in the literature. In comparison there is no documentation as to what effects hygiene measures have upon cerebrovascular function of closed head injured patients (CHIP).

The purpose of this correlational study was to identify by quantative physiologic measures, the conditions under which selected hygiene interventions directly affect observed changes in the cerebrovascular function of CHIPs.

The sample consisted of 19 CHIPs who had been admitted to a university medical center's surgical intensive care unit (SICU) between March 10 and August 31, 1980. Subject selection was based upon the following criteria: documented CHI with a Glasgow Coma Scale (GCS) score of $> 3 \leq 12$; have in place a functioning submachnoid bolt (SAB), arterial catheter and standard ECG electrodes. All CHIPs were required to be without severe pulmonary-thoracic complications. Although not a requirement of this study, all patients were intubated and mechanically respired. No restrictions were placed upon subjects relative to age, sex, or admission ethanol blood levels. Cerebrovascular function measured as mean intracranial pressure (MICP), mean arterial blood pressure (MABP) cerebral perfusion pressure (CPP) and heart rate (HR) were recorded using a calibrated bedside Hewellet-Packard Patient Monitoring System (H-P PMS).

The research design was formulated to test the effects of oral, body, and indwelling catheter hygiene upon cerebrovascular function. The statistical analysis used was a one-way analysis of variance. Independent variables were three hygiene measures, resting or baseline MICP, and core body temperature while dependent variables were MABP, MICP, CPP and HR.

The effects of the nursing interventions of oral hygiene (H_1), body hygiene (H_2), and indwelling catheter care (H_3) upon the dependent variables of MABP, MICP, CPP, and MHR in CHIPs were compared to measurements recorded at baseline, peak intervention, and one-minute recovery time intervals. Significant increases ($p < .01$) were measured in all dependent variables when baseline measurements were compared to peak intervention measurements in all three hygiene measures. Significant decreases ($p < .01$) were recorded in all dependent variables when peak intervention measurements were compared to a one-minute recovery time. Only in one situation were recovery measurements significantly different from baseline measurements and that occurred in HR during the intervention of oral hygiene.

When each hygiene intervention was compared to each other hygiene measure no significant differences between interventions relative to their effect upon the physiologic parameters recorded was shown.

This study suggests that hygiene measures can be performed upon closed head injured patients whose resting MICP values are less than 20 mmHg without causing detrimental changes in physiologic function. In all situations CCP increased significantly between baseline and intervention and then returned to baseline or recovery within one minute following each intervention.

A COMPARISON OF ROLE CONCEPTIONS AMONG NURSING STUDENTS AND FACULTY FROM ASSOCIATE DEGREE, BACCALAUREATE DEGREE, AND DIPLOMA NURSING PROGRAMS AND HEAD NURSES

Barbara A. Pieta
University of North Florida

Frequent turnover and lack of holding power of nurses in health care delivery agencies are concerns for health professionals, health service agencies, and the public at large. The concerns revolve around the high cost which turnover imposes and the diminished ability to provide safe, effective nursing care.

Considerable attention has been given over the last decade to the issue of nurse supply with emphasis on the socialization process and its impact on manpower. Of particular concern has been the frustration experienced by the neophyte nurse upon entering the employment setting.

It has been suggested by Corwin and Kramer among others that differences in the perceptions between what students learn in school as the practice of nursing (ideal role conception) and what is found in the actual practice of nursing (actual role conception) may be a factor in new nurses' frustration and can exacerbate feelings of dissatisfaction and doubts about the appropriateness of the career goal selection.

The rationale for this study was developed upon the principles of professional and organizational socialization. Measured differences in role conceptions of socializers (nursing faculty and head nurses) included in this study may well be a factor in new nurses who experience difficulty in making the transition from student to employee. Frustration encountered in making the transition

may lead to job turnover, or to the abandonment of nursing as a career. Withdrawal from the profession is a factor in nursing shortages.

The purpose of this study was to examine three role conceptions of nursing--bureaucratic, professional, and service--as perceived by senior nursing students and their faculties from three types of nursing education programs (associate degree, baccalaureate degree, and diploma), and as perceived by head nurses practicing in non-profit general hospitals. The role conceptions were defined as follows:

Bureaucratic--requires primary loyalty of the nurse to the hospital and hospital administration, to work routines, and to personnel administration. Emphasis is on values such as strict adherence to rules, routines, record-keeping, and punctuality.

Professional--requires primary loyalty of the nurse to the profession. Emphasis is on values such as active participation and membership in the professional association and commitment to formal knowledge and continued learning.

Service--requires primary loyalty of the nurse to the patient as the recipient of humanitarian services. Emphasis is on the values of service to humanity, compassion, dedication, and understanding.

A role conception/discrepancy scale was designed and standardized by the author to identify what each of the seven groups perceived as the ideal and the actual practice of nursing for each of the three role conceptions and their resulting role discrepancies (difference between the ideal and actual). Six questions guided the investigation

to determine if the groups perceived a difference between the role of nursing as an ideal and how nursing was practiced in selected general hospitals.

There were 838 women respondents. The responses were analyzed using analysis of variance and a *t* test to determine the significance of differences among means in the perceptions of the role conceptions for and across the groups.

Of the three role conceptions analyzed, similarities were found in the perceptions of the ideal role conceptions for the practice of nursing for each student, faculty, and head nurse group. All groups perceived that the service role should be practiced to the greatest extent and that the bureaucratic role should be practiced to the least extent. The perceptions of the actual practice of nursing for these three role conceptions were more diverse among the groups. The faculty and student groups perceived that the bureaucratic role was practiced to the greatest extent. Head nurses, on the other hand, perceived that the service role was practiced to the greatest extent.

Role discrepancies were found for all the groups for each role conception. The greatest role discrepancy occurred in the service role conception for all groups except one--associate degree faculty. The least role discrepancy occurred in the bureaucratic role conception for all seven groups.

No absolute cause-effect relationship can be proven from this study. However, since nursing traditionally, and as demonstrated by this study, has held the service role as the most important, it may be inferred that the service role discrepancy being the greatest for all groups is a factor in the frustration, job turnover, and

shortages experienced in nursing.

These findings led to recommendations for modification and change in nursing education programs and nursing practice. Additionally, based upon the role discrepancies found and their implications for nursing education and nursing practice, areas for further investigation were suggested. Particular attention was given to factors, such as demographic variables of education and experience, not included in this study which may have affected the outcomes and which will be reported on in the future publications by the author.

(Note: References not furnished.)

MULTIVARIATE PREDICTION OF ACADEMIC SUCCESS IN A COLLEGIATE PROGRAM OF NURSING

Sharon Lynn Pontious
The University of Texas at El Paso

The major purpose of this study was to determine a procedure for the development and validation of effective and efficient multivariate regression equation(s) for predicting student academic success in the upper division portion of one nursing program. The ultimate goal of this study was to develop and validate more accurate and consistent predictive equation(s) for early identification of students with high success versus nonsuccess (withdrawal or failure) potential, thereby facilitating increased student retention and minimizing unnecessary attrition.

A total of 48 independent variables were utilized. Each variable was selected on the

basis of its theoretical relationship with academic success in college and for its reflection of this nursing program's objectives, assumptions, and beliefs. Three facets of students were represented by these categories of variables: demographic/ background, cognitive performance, and personality.

Four features, unique to research on nursing students, were included in this study to facilitate the selection of the best set of predictors. These unique features were: (a) the comparison of untransformed (e.g., raw scores or percentages) and transformed (ranked, by replacing scores or percentages with ranks) data; (b) the use of interaction independent variables (one variable multiplied by another to obtain joint effects over and above the effects of any variable alone); (c) the use of achievement pretests, developed and validated for this study by the author, to determine student (currently just entering the first core clinical nursing course) levels of required pre-nursing course content; and (d) the use of a combination of statistical procedures along with a theoretical framework to facilitate selecting the best possible predictors of nursing student academic success. The results are summarized in the following conclusions:

1. Academic success, as measured by the classification of students as successful or unsuccessful, can be significantly ($p < .01$) predicted for the upper division semesters of a collegiate nursing program using six or less ranked, multivariate, predictors.

2. The best combinations of ranked independent variables correctly predicted an average of 80 percent of students as successful or unsuccessful for upper division semesters in nursing.

3. The criterion-referenced achievement pretests, developed by this author to measure levels of knowledge in required pre-nursing courses, replaced the traditional measures of scholastic ability/achievement used for admission to nursing programs, including the pre-nursing grade-point average. In fact, the overall social science achievement pretest was a significant ($p < .01$) predictor for all upper division semesters. In addition, pretests significantly predictive for two or more upper division semesters included physiology, statistics, and the overall natural science pretest.

4. Predictions were enhanced when the following diverse independent variables were included in prediction equations: (a) personality variables, especially test anxiety (TAI); (b) demographic/background variables, such as family background, sex of student; (c) cognitive performance variables, especially levels of knowledge in required pre-nursing courses; (d) ranked independent and dependent variables; and (e) interaction variables, especially those which were cross products of test anxiety and sex of student, test anxiety and achievement pretests, or test anxiety and the most recently completed nursing grade-point averages.

5. The particular combinations of independent variables, which significantly predicted success in this program's upper division nursing course, strongly emphasize the fact that the prediction of academic success requires multiple complex variables in order to differentiate potentially successful from potentially unsuccessful students.

6. A correlation analysis indicated that a combination of a low socioeconomic and minority ethnic family background, being a male nursing student, having low achievement pretest scores, and having high test anxiety levels were closely associated with failure of or withdrawal from nursing core clinical courses. This was also supported by the combination of ranked variables chosen as the best predictor set for each semester of this upper division nursing program.

THE FACULTY WORK PLAN AND APPRAISAL: ITS POTENTIAL FOR FACULTY ROLE DEVELOPMENT

Luz S. Porter
West Virginia University Medical Center

This exploratory study is designed to begin analysis on the "Faculty Work Plan" and its potential for faculty role development in a university setting. The specific goals are: (1) to identify the degree of congruence between faculty work plans and the school goals; and (2) to determine the relationship between faculty work plan/school goal congruence and job satisfaction.

Faculty of a school of nursing are currently utilizing the goal and action oriented work plan. All school of nursing faculty will be invited to participate in this study. Faculty that volunteer will be asked to sign an informed consent. Data collection includes:

1. congruence of participant's faculty work plan with school of nursing goals

by a panel of three independent judges using a Likert type scale

2. participant's level of job satisfaction by questionnaire

3. participant's locus of control

4. demographic background data.

Complete anonymity of the volunteer participants will be guaranteed. The school will not be named in any reports written about the study. Correlation statistics, ANOVA, and rank ordering are the anticipated manipulations of the data. Outcomes of this study will be to generate significant hypothesis amenable to further testing. The information will be useful in enhancing individual faculty development and productivity as well as reinforcing linkages between faculty and administration.

BEHAVIORS OF SIGHTED INDIVIDUALS PERCEIVED BY THE BLIND AS HINDRANCES TO SELF-RELIANCE IN THE BLIND

Bonnie L. Rickelman
and Jerry N. Blaylock
The University of Texas at Austin

The purpose of this study was to determine the behaviors of sighted individuals toward the blind which caused the blind to feel less self-reliant. In addition, subjective reactions of the subjects and actions taken, if any, were analyzed. Guidelines were then developed from the data and from the literature which may help the sighted interact with the blind in ways that will foster, rather

than hinder, self-reliance.

Sixty legally blind men and women responded in an interview to a questionnaire. A content analysis was done on the responses. From the situations described in which the blind subjects felt less self-reliant, 10 categories evolved. Examples of these include: (1) patronizing or derogatory statements were made; (2) equal opportunity was not accorded; (3) assumptions were made that the blind are not capable adults, and (4) dependency was automatically assumed.

When asked their feelings in response to the situations which had occurred with the sighted, the most frequent emotions reported were anger, frustration, hurt, and embarrassment. Actions, if any, reported taken after the situations occurred were categorized as passive, assertive, or aggressive. More than one-half of the subjects reacted in a passive manner.

DISTINCTIVE, EFFECTIVE, AND COST-EFFECTIVE NURSING CONTRIBUTION TO EARLY IDENTIFICATION OF YOUNG CHILDREN AT RISK

Selcuk T. Sahin
University of Massachusetts

The purpose of this paper is to demonstrate the distinctive, effective, and cost-effective role of the nurse in preschool screening as depicted in results of a Model Preschool Screening Program conducted in Western Massachusetts when 265 preschoolers were screened.

Increased emphasis is being placed on the early identification of children who either have, or are at-risk of having, developmental delays (Brazelton, 1977; Zadig and Crocker, 1975). This identification is necessary in order to prevent or alleviate later learning difficulties through appropriate intervention programs (Sahin, IJNS, 1979). There is an increased amount of legislation in the country that mandates preschool screening. The number of children to be screened under the mandate of federal and state laws alone is in the millions. Clearly there is much need for effective and viable preschool screening programs designed for mass screening purposes (Sahin, 1978).

Presently most of the preschool screening programs are designed and managed by professionals other than nurses, e.g., psychologists, counselors, special education specialists, etc. However, the nurse is the appropriate professional to take leadership responsibility in such screening efforts. Her educational background, experiences, and training allow the nurse to perform screening with minimal additional training. The professional nurse is accustomed to paying attention to process and to management of delivery. In fact, after screening all 4-year-olds in Sweden, the Swedes have placed the nurse at the heart of screening (Wagner, 1975). The Model Preschool Screening Program was designed with this premise in mind.

The major unique features of the Model Preschool Screening Program (PSSP) reported in this paper are the following:

1. It interfaces the seemingly disparate medical and educational approaches to screening. The nurse-designated and -administered Nursing Observational Screening Tool (NOST) contributed to this interface.

2. It builds a finer screening capability to the screening battery in terms of referral types. Most of the screening batteries reported in the literature are binary in nature (referral or no referral), therefore, so are the screening results. In this case, however, there are two additional categories: wait and watch, and specific referral. This feature facilitates a step-by-step evaluation process and decreases the number of multifaceted full-team evaluations, thereby decreasing undue labeling and undue costs. Furthermore, the Specific Referral category sorts out the not directly educational special needs and brings the 3- and 4-year-olds into contact with the health care delivery system.

3. It interfaces the screening battery design with the screening delivery design for compatibility.

4. It pays particular and meticulous attention to screening delivery (process) to increase efficiency without compromising effectiveness. Most of the preschool screening programs reported in the literature concentrate on the battery with hardly a mention of the delivery. However, delivery design is crucial to the viability of such programs, since it is the delivery most subject to outside scrutiny. Even very well constructed screening battery can fail to achieve its objectives in the face of poor delivery design. For these reasons, the PSSP delivery design was constructed and piloted very carefully.

The PSSP was designed and implemented in a Massachusetts school district with a middle to low income population. The PSSP was made available to all 3- to 5-year-olds in the district and 265 such children were screened.

The tools employed in the screening were: The Denver Development Screening Test (DSST) for personal-social, fine-motor, language, and gross-motor development; Allen cards and Stereo Fly for vision screening; the Nursing Observational Screening Tool (NOST), which was developed by the author; and height and weight measurements. The NOST was pre-tested on 135 children five months prior to the PSSP and is a nursing screening tool to be administered by nurses.

Screening staff consisted of 10 experienced senior nursing students who were hired by the school system. Their pediatric nursing instructor (author) coordinated the effort.

A pilot project was conducted in a local nursery school approximately two weeks prior to the PSSP in order to test the screening battery as well as the screening delivery design.

The information obtained on children screened by the PSSP battery provided the data base for this study and consisted of the following subcategories: (1) screening data obtained from the 265 children between the ages of 3 and 5 years, as well as additional historical data obtained from the parents; (2) information obtained from the children's parents who evaluated the PSSP; (3) categorization information obtained from kindergarten teachers and school nurses on the 86 children who were screened by the PSSP and who later entered kindergarten. This information was obtained 14 months after the screening, the school professionals who gave this data had not had access to the PSSP results. This actual school categorization reflected the evaluation results of orthopedists, opthalmologists, psychologists, special educators and other specialists.

As a result of the screening, the children were classified into four categories: (1) All O.K. now, (2) wait and watch, (3) specific referral, (4) substantial referral.

Statistical analysis of screening effectiveness was through the use of pertinent statistical measures of association, such as chi square, Cramer's V, and gamma, as well as use of such measures as rates of screening selection, valid positives, and missed cases. Statistical analysis of risk measures was through use of such rates as: screening selection, false negatives, and false positives. Statistical analysis of process efficiency (screening delivery efficiency) was through study of delivery indices and comparative analysis with another program. Analysis of cost-efficiency was through study of cost-efficiency indices such as dollar cost per child screened. Cost-effectiveness ratios were developed through study of dollar cost per child correctly identified as at-risk.

The major conclusion of the study, as substantiated by data analysis, is that the framework operationalization facilitates a preschool screening program which: effectively identifies at-risk children, is acceptable to clients, is compatible with screening agencies, and is efficient and low cost.

Comparative predictive validity figures point to the highly significant contribution of the nursing screening tool and the distinctive contribution of the nurse to effectiveness of the screening program. For example, the inclusion of the NOST in screening battery appears to substantially improve the effectiveness of the screening battery: predictive capability increases from $p < 0.11$ to $p < 0.0001$; selection rate increases from 3.5 percent to 24 percent where the prevelance rate is

23 percent; valid positives improves from 10 percent to 85 percent; missed cases improves from 90 percent to 15 percent. The risk measures are also improved such that false negatives improve from 21 percent to 3.5 percent.

Process efficiency indices indicated that the screening delivery design was an efficient one. Cost per child screened was approximately $5. This figure represented 60 percent to 91 percent savings on each child screened, when compared with other available cost data of the period. Cost-effectiveness index of DDST alone was $215 per child correctly identified as at-risk, while this ratio was only $25 per child identified for the composite battery which basically meant the inclusion of the Nursing Observational Screening Tool.

Trimming costs by even $1 per child screened, without significant decrease in effectiveness and without compromising humanistic approach, could well release millions of dollars for other purposes, such as treatment. The PSSP offers one such possibility.

The use of NOST in the screening battery assures screening some of the major health-oriented special needs. Coupled with the finer sifting capability in terms of referral types, the PSSP battery screens out and refers children with those physical needs that must be taken care of during the preschool years. This is especially important because the 3- and 4-year-olds are the segment of the childhood population least exposed to the health care delivery system in the country (Owen, 1975). Data analysis suggests that the predictive validity of the PSSP screening battery is appreciably enhanced by the use of the NOST. The results of data analysis point to a significant role for the nurse as a screener. Furthermore, the nurse can

help bring about an interface between the conflicting medical and educational models of screening. Such an interface would be a crucial determinant of an effective program in long-term management of children with special needs.

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THE EFFECTS OF ENDOTRACHEAL TUBE SUCTIONING UPON CEREBROVASCULAR FUNCTION IN PATIENTS WITH SEVERE CLOSED HEAD INJURIES

Jacqueline Ouzts Shogan
and L. Claire Parsons
University of Virginia

Severe closed head injuries constitute a serious and frequently life threatening condition to the patient because of the rapidly developing cerebral edema and/or intracranial bleeding. These secondary injuries result in elevated intracranial pressure (ICP), and decreased cerebral perfusion pressure (CPP). Mechanical ventilation and pharmacologic interventions have provided better ways of medically managing the acutely ill closed head injured patient (CHIP); however, nursing management has been somewhat hampered due to the lack of data relative to the safety of instituting nursing interventions.

The purpose of this correlational study was to determine, by quantitative physiologic measurements, the conditions in which endotracheal tube suctioning (ETTS) and its related manual hyperventilation (MH) sequence cause significant changes in cerebrovascular function of CHIPs.

The sample consisted of 20 CHIPs who had been admitted to a surgical intensive care unit ((SICU) during the spring and summer months of 1980, and who met criteria for selection. No restrictions were placed upon age, sex, or admission ethanol blood levels. Criteria for selection included a

documented CHI and a Glasgow Coma Scale (GCS) score of $> 3 \leq 12$; have a functioning subarachnoid bold (SAB), arterial catheter, and standard ECC electrodes. These monitoring devices were used to record MICP, mean arterial blood pressure (MABP) and ECG (heart rate). The CHIP was also required to be intubated and mechanically ventilated and without severe pulmonary-thoracic complications. Cerebrovascular function was evaluated using the physiologic measurements of MICP, MABP, CPP, and heart rate, recorded by a calibrated bedside Hewellet-Packard Patient Monitoring System (H-PPMS).

The research design of the study was developed to examine the effects of ETTS upon cerebrovascular function. Data were analyzed using paired and independent T-test.

Baseline measurements of cerebrovascular function recorded at 60-minute intervals on each subject during resting periods revealed that the CPPs were always adequate to provide for a CPP of > 50 mmHg.

The effects of ETTS upon MABP were significantly ($p < .01$) elevated during $ETTS_{1-5}$ when compared to baseline levels. MH performed after ETTS was generally associated with an elevated MABP when compared to resting measurement and was significantly different ($p < .05$) during MH_{2-3}.

Measurements of MICP were significantly elevated during $ETTS_{1-3}$ when compared to resting levels. MH_{1-5} was not significantly different from resting levels. CPP was not adversely affected in any patient during the ETTS procedure, even though significant ($p < .03$) elevations were recorded during $ETTS_{2-5}$ and MH_{2-4}. These elevated CPPs indicated that autoregulation of cerebrovascular functions was taking place.

HRs during $ETTS_{1-5}$ and MH_{2-4} were significantly ($p < .04; .01$) elevated when compared to resting measurements. The increase in HR during all ETTSs tended to be greater than during MH. The effects of resting MICP and core temperature upon cerebrovascular function showed that higher resting MICPs were associated with a substantial decrease in MICP during MH_{1-4} and a substantial increase during $ETTS_3$. Hyperthermia (T_2) was associated with an increase in MICP during all sub-interventions included within the ETTS procedure. Decreases in MICP during MH_{1-4} were observed under conditions of normothermia (T_1). These findings suggest that MICP in patients who were hyperthermic may not have been as responsive to manual hyperventilation as MICP in patients who were normothermic.

Based upon these findings, the ETTS-MH protocol has been altered within the SICU to include no less than 60 full seconds of MH between the last two ETTS in order that MICP level be allowed to return to resting levels. Monitoring has been extended to 5 minutes following completion of ETTS and MH.

SCREENING FOR ABUSE AND NEGLECT IN A NEIGHBORHOOD HEALTH CLINIC

Sharon Spears
and Aileen Edgington
The University of Texas Health Science Center at Dallas

The Children and Youth Project, University of Texas Health Science Center at Dallas operates three clinics in a high-minority, low-income area known as West Dallas. Two of the clinics are primary pediatric clinics and one provides services for adolescents. Each clinic is staffed with a

multidisciplinary team, including two nurse practitioners, and is located in the neighborhoods of the patients.

The Children and Youth Project was funded in 1978 as the site of one of four national demonstrations on Child Neglect. The first stated goal of this demonstration grant was to identify all neglected children in the target area. This paper will describe the development and utilization of a screening tool necessary for the identification of these children.

Experience in the primary pediatric clinics of the Children and Youth Project had shown that the nurse practitioners were particularly skilled in identifying families at high risk for neglect and abuse. Their observations were frequently described as "gut level feelings." The screening tool was an attempt to define the components of the process the nurse practitioner went through to arrive at this gut level feeling. Because other health clinic staff had opportunities to observe parental behavior in the clinic and could share this information on a screening tool as well, the screening tool needed to be easy to use and consistent across health clinics.

Review of the literature of screening tools for high risk yielded screens of considerable length, complicating use by busy health care providers.

Meetings were held with clinic nurse practitioners to develop a check-list outlining their primary concerns about a family. The screening tool (see CNR Referral Form) allows space for descriptive comments but can be completed by just checkmarks. The screen can be filled out or added to by any clinic personnel--pediatrician, nurse practitioner, nurse aide, front desk clerk.

The completed screen is then routed immediately to the social worker who makes contact with the family while they are still in the clinic.

Data are currently being analyzed to determine which categories on the referral form consistently delineated neglecting or abusing families.

CNR REFERRAL FORM DATE:_____

Name_____

H.T._____

C&Y #_____

SOURCE_____

__Mother's age State Age_____

__Mother's comprehension Indicate concern_____

__Mother's effect Indicate_____

__Mother's coping ability Indicate concern_____

__Family problems Indicate_____

__Mother-Child Interaction Indicate_____

__Child's behavior Indicate_____

__Major health problem of child or parents Whose/Indicate_____

__Prenatal factors Indicate concern_____

__Hygiene Describe_____

__Other Describe_____

Comments:

AN INVESTIGATION OF THE RELATIONSHIP BETWEEN ACADEMIC ACHIEVEMENT AND NURSING PERFORMANCE IN BACCALAUREATE NURSING GRADUATES

Margaret Ann Wetsel
University of Miami

The problem was: What is the relationship between the academic achievement of graduates from a baccalaureate school of nursing and the evaluations (self and employer) of their job performance three years after graduation?

The five indicators of academic achievement selected include: high school rank, pre-nursing grade-point average (GPA), American College Testing (ACT) Program score, final grade-point average, and Watson-Glaser Critical Thinking Appraisal (WGCTA) score.

Job performance was measured through the use of a self-appraisal questionnaire and an employer appraisal questionnaire developed by Dr. Patricia Schwirian, The Ohio State University in Columbus, Ohio.

Upon reviewing the literature, there was a strong indication that a positive relationship was indeed present between a nursing student's academic achievement and later clinical performance in an employment setting. However, the literature review also revealed that studies which evaluate nurses and their job performance beyond one year of practice had not been published.

Academic achievement can be defined in a number of different ways. In academia, achievement is measured by comparing the student's behavior to certain predetermined criteria for the course or module. The literature supports the selection of high school rank, ACT score, pre-nursing GPA, WGCTA score, and final GPA as salient indicators

of academic achievement.

Job performance achievement is measured through the use of a variety of performance tools and is reflected in the employee's salary, fringe benefits, written evaluation, etc. Achievement motivation is the underlying force which is being measured by both the indicators of academic achievement and job performance appraisals.

The design of the research project is non-experimental and longitudinal in nature. The data used in this study were generated from three sources--The Ohio State University (OSU) School of Nursing permanent record files of the nurse participants, the self-appraisal questionnaire, and the employer appraisal questionnaire.

The OSU School of Nursing graduates in the classes of 1974, 1975, and 1976 were chosen to participate in the study. These three classes were educated entirely under the integrated curriculum based on the Imogene King Model. In the longitudinal study, 202 nurses participated.

The following conclusions were drawn from the study: (1) the graduate's high school rank, final GPA, and ACT composite score were positively related to job performance; (2) mean performance level was very high--3.5 on 4.0 scale; (3) majority of respondents (72 percent) were practicing in Ohio, (65 percent) employed by hospitals on medical-surgical units; (4) employers could use high school rank, final GPA, ACT composite score for evaluation purposes when hiring new graduates.

BIRTH OF A FAMILY NURSING RESEARCH GROUP WITH A REGIONALIZED APPROACH

Marjorie A. White
University of Florida

Except for the rich base of educational research in nursing, cooperative scientific inquiry over long distances has not been the major pattern of nursing research to date. Slow progress has been made toward building an empirical base for a science of nursing from relatively isolated researchers or groups who meet at yearly conferences. This delay has occurred despite long-standing regionalized nursing societies, particularly in the West and in the South. Duplication of research efforts has resulted. Parochial approaches to all phases of the research process have hindered the vital need for cross fertilization of ideas necessary in formulating questions, applying models, developing methodologies, and discovering new ways to analyze data.

This paper describes one regionalized model of group research interaction culminating in the birth of the Family Nursing Research Group of the newly organized Midwest Nursing Research Society (MNRS). This Society represents nurse researchers from 13 Midwestern states. The Family Nursing Research Group is comprised of eight doctorally prepared nurses from seven schools of nursing. Diversified models used by other research groups in the Society are compared with the Family Nursing Research Group. Several facets of the group's evolution are conceptualized within Parson's frameworks of social action and evolutionary universals. On a substantive level these concepts include the challenges in defining the situation, establishing avenues of communication, confirming leadership, regrouping, finding sources of funding; and establishment of the group's boundaries, decision-making techniques, use of consultants, and a legal agreement for publishing rights.

Original sub-interest components of the larger group included: 1) impact of illness on the family, 2) general aspects of family health, such as the elderly,

family planning, and widowhood, 3) women's health, and 4) family functioning instrument development. The group's evolution in thinking toward the latter focus of family functioning is discussed.

The Family Dynamics Measure (FDM) represents the initial culmination of the group's research efforts. Toward establishing validity and reliability, the FDM is currently undergoing first level testing with divergent family populations in the Midwestern states. Through an intricate process, the group reached consensus on several clearly defined steps for rigorous testing. Copyrighting the instrument is a future task envisioned by the group.

We had a fledgling experience with communication by computer. CONFER is a computer conferencing program designed to free members from constraints of time and space, scheduling, and travel. Members "voted" on issues of instrument development at crucial states of the process via computer, utilizing varied approaches within their institution for handling this technology. CONFER both assisted and hindered progress.

Each member faced challenges in making optimum contributions to the group. One such challenge was the attempt to mesh idiosyncracies of faculty responsibilities in each school of nursing with desired tasks of the group.

The structure and function of the Family Nursing Research Group is compared with other interest groups in the Midwest Nursing Research Society. This comparison lends credibility to our model as one that is feasible for creativity, cooperation, and efficiency in contributing to a body of knowledge in nursing. It serves as one example of scientists, each with well developed research priorities of their own, who utilize processes of accommodation, consensus, and negotiation in the effort to achieve a commom research goal. We now acknowledge our birth, and there is every evidence that the Family Nursing Research Group will continue to function creatively.

(Note: References not furnished.)

SLEEP ONSET LATENCY IN YOUNG HOSPITALIZED CHILDREN: ELECTRONIC OBSERVATIONAL METHODOLOGY

Marjorie A. White
University of Florida

Stress and separation anxiety are common responses in young hospitalized children, especially during the nighttime sleep onset latency period when parents cannot room-in. Unfortunately, this separation occurs at a time when family members have an increased need for each other. Nurses are challenged to design nursing strategies that will assist children to cope with this threatening part of their hospital day.

This study utilizes Sussman's theoretical framework of family-organizational linkages to conceptualize the situation of parent-child separation. The framework incorporates concepts of linkage, linkage process, linkage agents, and an option sequence that clarifies the relation between the family and the hospital, as a bureaucratic organization.

In relation to other disciplines, nursing has been slow to incorporate electronic methods of data collection that are computer compatible. Toward these efforts, this study demonstrated application of the Senders, Signals and Receivers system (SSR), an innovative electronic observational system, to the nighttime sleep onset latency period of young hospitalized children. Behavior codes were entered into a portable 10 x 12 inch keyboard that automatically encodes onto a magnetic tape recorder. The data were then transcribed, timed, and analyzed by computer, by-passing the typically tedious and time-consuming manual transcription and data cards of older methods. The SSR system preserves the incidence, and for continuous behaviors, the duration, coincidence, and sequence of all recorded events to the nearest .05 seconds.

In a quasi-experimental design, 18 children ages 3 to 8 years, whose parents did not room-in, were randomly assigned to one of two groups: a) the bedtime story, or b) no bedtime story. An observer continuously recorded behavior for 45 minutes on each of 3 consecutive nights for all subjects, yielding 54 nights of observations. The story group received the bedtime story "Little Lost Kitten," which had been tape-recorded by a parent.

After data collection, 39 behaviors originally organized into mutually exclusive sets were grouped into 8 categories: inactive, sleepy, active, contact, verbal communication, neutral, distress, and pleasure. Data were analyzed and reported using descriptive statistics expressed as frequency and percentages for momentary behaviors, and duration and mean time for continuous types of behaviors. The story group exhibited a greater mean number of inactive behaviors and contact behaviors than the no-story group, in addition to a shorter sleep onset latency period than the no-story group. Also, fewer distress behaviors occurred in the story group.

This study suggests that hospitalized children who receive parent voice contact through a bedtime story recorded by the parent, engage in self soothing behaviors as a means of coping with the separation experienced at the nighttime sleep onset latency period. Nurses, as linkage agents, can effect the linkage process between family and organization by providing an option sequence to parents that enlists their participation in their child's care. This nursing strategy may increase the coping ability at the nighttime separation period to which young children are so vulnerable.

(From a study with Elsie Wear, R.N., M.S., Assistant Clinical Professor, University of Wisconsin-Madison, School of Nursing.)

THE EFFECTS OF BODY POSITION CHANGES ON THE CEREBROVASCULAR FUNCTION OF THE CLOSED HEAD INJURED PATIENT

Margaret M. Wilson
and L. Claire Parsons
University of Virginia

Nursing care of patients with closed head injury is aimed at controlling and reducing intracranial pressure to prevent further injury while maintaining an adequate cerebral perfusion pressure. The purpose of this study was to determine the effects of various body position changes performed as part of routine nursing care interventions on the cerebrovascular function of the closed head injured patient. These position changes included turning and positioning in bed, head rotation, raising and lowering the head of the bed, and range of motion exercises.

The study was carried out in the surgical intensive care unit of the University of Virginia Medical Center from March 10 to June 30, 1980. During this period, 14 patients admitted to this unit with a diagnosis of closed head injury were included in the study. These subjects had resting mean intracranial pressures that ranged from 0 to 20 Torr. A total of 175 observations of six designated position changes were recorded on these subjects. The effect of each position change on the subject's heart rate (HR), mean arterial blood pressure (MABP), mean intracranial pressure (MICP), and cerebral perfusion pressure (CPP) was observed and analyzed. The magnitude of changes seen was also analyzed to determine a relationship between temperature and resting levels of intracranial pressure.

All position changes, with the exception of one, produced increases in MICP and CPP. One position change, raising the head of the bed, was

expected to produce decreases in MICP and CPP and was shown to do so. In most cases, the changes were transient and showed recovery toward baseline values at one-minute post intervention. There was not a significant difference with respect to magnitude of change between subjects with high or low resting MICP. The effects of temperature upon changes in the physiological parameters produced by the position changes were insignificant for MICP, CPP, and HR; there was a significant difference in the MABP.

The literature has shown little documented evidence of the effects of routine nursing care interventions upon the cerebrovascular function of closed head injured patients. This study suggests that these activities may be safely performed upon patients who have a resting mean intracranial pressure between 0 and 20 Torrs. Cerebral perfusion pressure was adequately maintained throughout each position change, indicating that adverse effects from these position changes are not likely.